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Regulations and Non-Regulatory Revisions to State Implementation Plan: Kentucky

Atlantic Environmental Associates, Inc.
Waltham, MA

Prepared for

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Regulations and Non-Regulatory Revisions to State Implementation Plan: Kentucky

By

Atlantic Environmental Associates, Inc.
59 Vernon Street
Waltham, MA 02154

Contract No. 68-02-3565

EPA Project Officer: Willis P. Beal

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16. ABSTRACT

This document has been produced in compliance with Section 110(h) of the Clean Air Act, as amended in 1977, which mandates periodic publication of State Implementation Plan (SIP) requirements. The first section of the document comprises the Federally approved SIP regulations. It consists of the EPA-approved State and/or local air pollution control regulations cited by reference in the Federal Register; regulations promulgated as of August 1, 1981 have been included in this document.

The present compilation constitutes an update of a previous documentation of regulations as of July 1, 1979. State and/or local air quality regulations which have not been Federally approved as of August 1, 1981, are not included. However, any omissions of regulations from this document in no way affects the ability of the respective Federal, State, or local agencies to enforce such regulations. A summary sheet of the regulatory revisions is provided to give a quick historical assessment of the changes.

The second part of the document contains the text of non-regulatory SIP revisions approved by EPA up to August 1, 1981, excluding notices or certifications of public hearings and technical support data. A complete tabulation of these revisions is also provided.

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PREFACE

This document has been produced in compliance with Section 110(h) of the Clean Air Act, as amended in 1977, which mandates periodic publication of State Implementation Plan (SIP) requirements. The first section of the document comprises the Federally approved SIP regulations. It consists of the EPA approved State and/or local air pollution control regulations cited by reference in the Federal Register; all regulations Federally promulgated as of August 1, 1981 have been included.

The present compilation constitutes an update of a previous documentation of regulations as of July 1, 1979.* State and/or local air quality regulations which have not been Federally approved as of August 1, 1981 are not included. However, any omissions of regulations from this document in no way affects the ability of the respective Federal, State or local agencies to enforce such regulations.

This document is not intended to provide a tool for determining the enforceability of any given regulation. Rather, it is intended to provide a comprehensive compilation of those regulations which are incorporated by reference into Title 40, Part 52, of the Code of Federal Regulations (CFR). The exclusion of a Federally approved regulation from this document does not diminish the enforceability of the regulation. Similarly, the inclusion of a given regulation in this document does not, in itself, render the regulation enforceable by either the State or EPA.

The regulations have been organized in this document according to the official State/local agency format. However, since State air quality regulations vary widely in their organization, content, and language, a standardized subject index has been added. The index listings consist of both pollutant and activity oriented categories to facilitate usage. For example, regulations which apply to copper smelters may be found under sulfur compounds (50.2), particulate matter process weight (50.1.1), or copper smelters (51.15). Federal regulations pertaining to a given State are not included herein but can be found under Title 40 Code of Federal Regulations, Part 52.

Additionally, a summary sheet of the regulatory revisions is included to provide a quick historical assessment of the changes. These summary sheets contain the date of submittal to EPA of each revision and the Federal Register publication date on which the revision was approved by EPA. A brief description of the regulation which was submitted is also included.

In accordance with the Act, the second part of the document contains non-regulatory SIP revisions approved by EPA up to August 1, 1981. All approved non-regulatory revisions listed under Identification of Plan in the CFR are included except notices or certifications of public hearings, and technical support data. Non-regulatory submittals which have only received EPA approval on selected elements are included in their entirety with an accompanying indication of the status of Federal actions on the non-approved elements. The non-regulatory revisions have been organized in this document according to the date of publication of EPA approval in the Federal Register. For historical completeness, a complete tabulation of these revisions is provided at the beginning of this second section.

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* Regulations and Non-Regulatory Revisions to State Implementation Plan: Kentucky, EPA-450/2-80-024, prepared under Contract 68-02-3388, July 31, 1980.

SUMMARY OF
EPA-APPROVED REGULATORY REVISIONS TO STATE OF KENTUCKY SIP
BETWEEN JULY 1, 1979 AND JULY 31, 1981

Publication of Approval	Submittal Date	Page	Document Description
01/25/80	06/29/79	45FR6102	1979 revisions for Part D requirements for ozone non-attainment areas, including related regulations and Appendix N. Local regulations for Jefferson County.
09/22/80	-	45FR62811	Disapproval of 1979 ozone revisions for Boone, Campbell, and Kenton counties nonattainment areas, including related regulations. No submittal.
10/31/80	06/29/79	45FR72153	1979 revisions for SO_2 nonattainment areas: Boyd, Jefferson, McCraden, Muhlenberg, and Webster, including related regulations. Kentucky DNREP (Note: disapproval of compliance schedules for some sources)
12/24/80	06/29/79	45FR84999	TSP Part D SIP revision for nonattainment area, including related regulations. - Kentucky Department for Natural Resources and Environmental Protection

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    - 51.16 PETROLEUM STORAGE (includes Loading, Unloading, Handling and Related Topics)
    - 51.17 SECONDARY METAL OPERATIONS (includes Aluminum, Steel and Related Topics)
    - 51.18 SULFURIC ACID PLANTS

51.19 SULFURIC RECOVERY OPERATIONS
51.20 WOOD WASTE BURNERS
51.21 MISCELLANEOUS TOPICS
51.22 COATING OPERATIONS (Can, Coil, Paper, Fabric, Vinyl, Metal, Wire, Surface Coating)
51.23 CUTBACK ASPHALT
51.24 SOLVENT METAL CLEANING

DEPARTMENT FOR NATURAL RESOURCES AND
ENVIRONMENTAL PROTECTION
Bureau of Environmental Quality
Division of Air Pollution
401 KAR 3:010 General Provisions

Section 1. General Application of Regulations and Standards

Regulations of the Department shall be construed and applied in the light of the considerations set forth hereinafter which shall guide the Department in the issuance, modification and revocation of permits.

(1) All other provisions to the contrary notwithstanding, all air contaminant sources shall as a minimum apply such control procedures as are reasonable, available and practical.

(2) Nothing in these regulations is intended to permit any practice which is in violation of any statute, ordinance, or regulation.

(3) These regulations shall be constructed as complementary to each other, and to such other regulations as have been adopted or shall be adopted by the Department. If any provision of these regulations or the application thereof to any person or circumstance is held to be invalid, such invalidity shall not affect other provisions or application of any other part of these regulations, and to this end each provision of these regulations, and the various applications thereof are declared to be severable.

Section 2. Definitions

All terms not defined herein shall have the meaning given them in KRS 224.005 or by commonly accepted usage. As used in these regulations, unless the content clearly indicates otherwise, the following words shall have the following meaning:

(1) "Affected Facility" means an apparatus to which an emission standard is applicable;

(2) "Air Contaminant or Air Pollutant" includes smoke, dust, soot, grime, carbon or any other particulate matter, radioactive matter, noxious acid, fumes, gases, odor, vapor or any combination thereof;

(3) "Air Pollution" means the presence in the outdoor atmosphere of one or more air contaminants in sufficient quantities and of such characteristics and duration as is or threatens to be injurious to human, plant, or animal life, or to property, or which unreasonably interfere with the comfortable enjoyment of life or property;

(4) "Ambient Air Quality Standard" means a numerical expression of a goal to be achieved in a stated time through the application of appropriate preventive and/or control measures. It consists of two (2) parts; a specified concentration level for a particular air contaminant and the time averaging interval over which that concentration level is measured;

(5) "Commence" means that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractural obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification;

(6) "Compliance Schedule" means a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with any limitation or standard;

(7) "Construction" means fabrication, erection or installation of an air contaminant source;

(8) "Department" means the Department for Natural Resources and Environmental Protection;

(9) "Director" means director of the Division of Air Pollution of the Department for Natural Resources and Environmental Protection.

(10) "District" means an air pollution control district as provided for in KRS Chapter 77;

(11) "Emission Standard" means that numerical limit which fixes the amount of an air contaminant or air contaminants that may be vented into the atmosphere (open air) from any affected facility or from air pollution control equipment installed in any affected facility;

(12) "Existing Source" except as otherwise specified under applicable regulations means any source which is in being or under construction on the effective date of these regulations;

(13) "Fuel" means natural gas, petroleum, coal, wood, and any form of solid, liquid or gaseous fuel derived from such materials for the purpose of creating useful heat;

(14) "Incineration" means the process of igniting and burning solid, semisolid, liquid or gaseous combustible wastes;

(15) "Malfunction" means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation or any other preventable upset condition or equipment breakdown shall not be considered malfunctions;

(16) "Modification" means any physical change in, or change in the method of operation of an affected facility which increases the amount of any air pollutant (to which a standard applies) emitted by such facility or which results in the emission of any air pollutant (to which a standard applies) not previously emitted, except that:

(a) Routine maintenance, repair, and replacement shall not be considered physical changes and

(b) The following shall not be considered a change in the method of operation:

1. An increase in the production rate, if such increase does not exceed the operating design capacity of the affected facility;

2. An increase in hours of operation;

3. Use of an alternative fuel or raw material if, prior to the date any standard under this regulation becomes applicable to such facility, as provided by Subsection (1) of this section, the affected facility is designed to accommodate such alternative use.

(17) "New Source" means any source, the construction or modification of which is commenced on or after the effective date of these regulations, except that:

(a) Any source located within the Commonwealth of Kentucky and moved to another premises involving a change of address and is in compliance with current regulations shall be subject to applicable regulations at the new location.

(b) Any affected facility in compliance with current regulations commencing operation after a shutdown for more than five (5) years shall be considered a new source.

(c) Any affected facility not in compliance with current regulations commencing operation after a shutdown for more than eighteen (18) months shall be considered a new source

(d) Any affected facility not in compliance with current regulations commencing operations after a shutdown for six (6) to eighteen (18) months shall be in compliance with applicable regulations upon startup.

(18) "Opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

(19) "Particulate Matter" means any material, except uncombined water which exists in a finely divided form as a liquid or a solid at normal operating conditions;

(20) "Person or Persons" means any individual, public or private corporation, political subdivision, government agency, municipality, industry, co-partnership, association, firm, trust, estate or other entity whatsoever;

(21) "Source" means one or more affected facilities, which emits or may emit any air contaminant, contained within a given contiguous property line. The property shall be considered contiguous if separated only by a public thoroughfare, stream, or other right of way.

(22) "Stack or Chimney" means any flue, conduit, or duct arranged to conduct emissions to the atmosphere;

(23) "Standard Conditions":

(a) For source measurements means 21.1 degree Celsius (70 degrees Fahrenheit) and a pressure of 760 mm Hg (29.92 in. of Hg).

(b) For the purpose of air quality determinations means 25 degrees Celsius and a reference pressure of 760 mm Hg.

Section 3. Abbreviations

The abbreviations used in these regulations have the following meanings:

ASTM - American Society for Testing and Materials

BTU - British Thermal Unit

^{o}C - Degree Celsius (centigrade)

Cal - calorie

cfm - cubic feet per minute

CH_4 - methane

CO - Carbon Monoxide

CO_2 - Carbon Dioxide

COH - Coefficient of haze

dscf - Dry cubic feet at standard conditions

4

dscm - Dry cubic meter at standard conditions

°F - Degree Fahrenheit

ft - feet

g - gram(s)

gal - gallon(s)

gr - grain(s)

hr - hour(s)

HCl - Hydrochloric acid

Hg - mercury

HF - Hydrogen Fluoride

H_2O - water

H_2S - Hydrogen sulfide

H_2SO_4 - Sulfuric acid

in - inch(es)

k - 1,000

kg - kilogram(s)

l - liter(s)

LF - linear feet

lb - pound(s)

m - meter(s)

min - minute(s)

mg - milligram(s)

MM - million

mm - millimeter(s)

mo - month

N_2 - Nitrogen
NO - Nitric Oxide
NO_2 - Nitrogen Dioxide
NO_x - Nitrogen Oxides
oz - ounce
o_2 - oxygen
o_3 - ozone
ppb - parts per billion
ppm - parts per million
ppm (w/w) - parts per million (weight by weight)
µg - microgram
psia - pounds per square inch absolute
S - at standard conditions
sec - second
SO_2 - sulfur dioxide
sq - square
yd - yard

Section 4. Air Quality Control Regions

Air quality control regions designated by the Administrator of the United States Environmental Protection Agency pursuant to Section 107 of the Clean Air Act as amended are listed in this section. The air quality control regions consist of the territorial area encompassed by the boundaries of the designated jurisdictions herein geographically located within the outermost boundries of the area so delimited.

(1) Appalachian Intrastate Air Quality Control Region.

In the Commonwealth of Kentucky the following counties:

Bell
Breathitt
Clay
Floyd
Harlan
Jackson
Johnson
Knott
Knox
Laurel
Lee
Leslie
Letcher
Magoffin
Martin
Owsley
Perry
Pike
Rockcastle
Whitley
Wolfe

(2) Bluegrass Intrastate Air Quality Control Region.

In the Commonwealth of Kentucky the following counties:

Anderson
Bourbon
Boyle
Clark
Estill
Fayette
Franklin
Garrard
Harrison
Jessamine
Lincoln
Madison
Mercer
Nicholas
Powell
Scott
Woodford

(3) Evansville (Indiana) - Owensboro - Henderson (Kentucky) Interstate Air Quality Control Region

In the Commonwealth of Kentucky the following counties:

Daviess
Hancock
Henderson
McLean
Ohio
Union
Webster

(4) Huntington (West Virginia) - Ashland (Kentucky) - Portsmouth - Ironton (Ohio) Interstate Air Quality Control Region.

In the Commonwealth of Kentucky the following counties:

Bath
Boyd
Bracken
Carter
Elliott
Fleming
Greenup
Lawrence
Lewis
Mason
Menifee
Montgomery
Morgan
Robertson
Rowan

(5) Louisville Interstate Air Quality Control Region.

In the Commonwealth of Kentucky the following county:

Jefferson

(6) Metropolitan Cincinnati (Ohio) Interstate Air Quality Control Region.

In the Commonwealth of Kentucky the following counties:

Boone
Campbell
Carroll
Gallatin
Grant
Kenton
Owen
Pendleton

(7) North Central Kentucky Intrastate Air Quality Control Region.

In the Commonwealth of Kentucky the following counties:

Breckinridge
Bullitt
Grayson
Hardin
Henry
Larue
Marion
Meade
Nelson
Oldham
Shelby
Spencer
Trimble
Washington

(8) Paducah (Kentucky) - Cairo (Illinois) Interstate Air Quality Control Region.

In the Commonwealth of Kentucky the following counties:

Ballard
Caldwell
Calloway
Carlisle
Christian
Crittenden
Fulton
Graves
Hickman
Hopkins
Livingston
Lyon
Marshall
McCracken
Muhlenberg
Todd
Trigg

(9) South Central Kentucky Intrastate Air Quality Control Region.

In the Commonwealth of Kentucky the following counties:

Adair
Allen
Barren
Butler
Casey
Clinton
Cumberland
Edmonson
Green
Hart
Logan
McCreary
Metcalfe
Monroe
Pulaski
Russell
Simpson
Taylor
Warren
Wayne

Section 5. Classification of Air Quality Control Regions

(1) Classification Criteria

(a) Classification of regions shall be based upon measured air quality where known or, where not known, estimated air quality in the area of maximum pollutant concentration. Each region shall be classified separately with respect to sulfur oxides, particulate matter, carbon monoxide, nitrogen oxides, photochemical oxidants and such other pollutants as may have standards and priority levels.

(b) For sulfur oxides and particulate matter, each region shall be classified into one (1) of three (3) categories, defined as Priority I, Priority II or Priority III.

(c) For carbon monoxide, nitrogen oxides and photochemical oxidants, each region shall be classified into one (1) of two (2) categories, defined as Priority I or Priority III.

(d) Classifications with respect to hydrocarbons shall be the same as the classifications with respect to photochemical oxidants.

(e) Ambient concentration limits which define the classification systems for the said pollutants are specified in Table 1.

(f) The more restrictive classification will be chosen where there is a difference between the described values e.g., if a region is Priority I with respect to an annual average and Priority II with respect to a twenty-four (24) hour maximum value, the classification will be Priority I.

TABLE 1. AMBIENT CONCENTRATIONS LIMITS EXPRESSED IN MICROGRAMS PER CUBIC METER (CARBON MONOXIDE LIMITS ARE EXPRESSED IN MILLIGRAMS PER CUBIC METER) AND PARTS PER MILLION (IN PARENTHESIS) WHICH DEFINE THE CLASSIFICATION SYSTEM.

POLLUTANT	PRIORITY		
	I	II	III
	Greater Than	From-To	Less Than
SULFUR OXIDES			
Annual Arithmetic Mean	100(0.04)	60-100(0.02-0.04)	60(0.02)
24-hour maximum	455(0.17)	260-455(0.10-0.17)	260(0.10)
PARTICULATE MATTER			
Annual Geometric Mean	95	60-95	60
24-hour maximum	325	150-325	150
CARBON MONOXIDE			
8-hour maximum	14(12)*		14(12)
1-hour maximum	55(48)*		55(48)
NITROGEN DIOXIDE			
Annual mean	110(0.06)*		110(0.06)
PHOTOCHEMICAL OXIDANTS			
1-hour maximum	195(0.10)*		195(0.10)

*Greater than or equal to

(2) Classification

The classification of air quality control regions under the provision of this regulation shall be as in Table 2. (Next Page)

TABLE 2. PRIORITY CLASSIFICATION OF AIR QUALITY CONTROL REGIONS WITH RESPECT TO PARTICULATES, SULFUR OXIDES, CARBON MONOXIDE, NITROGEN DIOXIDE AND PHOTOCHEMICAL OXIDANTS (AND HYDROCARBON).

REGION	PARTICULATE MATTER	SULFUR OXIDES	CARBON MONOXIDE	NITROGEN DIOXIDE	PHOTOCHEMICAL OXIDANTS (HYDROCARBON)
Louisville	I	I	III	III	I
Cincinnati	I	II	III	III	I
Paducah-Cairo	I	II	III	III	III
Huntington-Ashland	I	III	III	III	III
Evansville-Henderson	I	II	III	III	III
Bluegrass	II	III	III	III	III
Appalachian	II	III	III	III	III
North Central	II	III	III	III	III
South Central	III	III	III	III	III

Section 6. Registration of Air Contaminant Sources

✓ (1) Persons engaged in the operation of air contaminant sources shall register such sources or discharges which may result from their operation in accordance with the provisions of this regulation.

(2) The Department may require from such persons reports containing information relating to said sources and air contaminants emitted by each into the atmosphere.

(3) Registration and reporting of air contaminants sources and their related discharges shall be upon forms provided by the Department.

(4) This section shall not apply to the following:

(a) Those air contaminant sources set forth in Section 15 of 401 KAR 3:060.

(b) Indirect heat exchangers with a capacity of one (1) million BTU per hour heat input or less and indirect heat exchangers using natural gas, liquid petroleum gas, or distillate fuel oil as a main fuel or combinations of these as main or standby fuel, with a capacity of less than fifty (50) million BTU per hour heat input.

(c) Internal combustion engines whether fixed or mobile, and vehicles used for transport of passenger or freight except as may be provided for in subsequent regulations.

(d) Direct fired sources used for heating and ventilating.

Section 7. Issuance of Permits and Compliance Schedules

(1) (a) No person shall construct or modify a source unless a permit to construct, therefor, has been issued by the Department.

(b) No person shall use, operate, or maintain a source resulting in the presence of air contaminants in the atmosphere in contravention of any standards and limitations unless an approved compliance schedule has been issued by the Department and is currently in effect.

(c) No person shall use, operate, or maintain a source, which is in compliance with all emission limiting regulations unless a permit to operate therefor, has been issued by the Department and is currently in effect.

(2) (a) Applications for permits or compliance schedules required under Subsection (1) of this section shall be made on forms prepared by the Department for such purpose and shall contain such information as the Department shall deem necessary to determine whether the permit or compliance schedule should be issued.

(b) Applications for permits or compliance schedules shall be signed by the corporate president or his authorized agent; or by an equivalently responsible officer in the case of organizations other than corporations; or, in other cases, by the source owner or operator; or, in the case of political subdivisions, by the highest elected official of such subdivision. Such signature shall constitute personal affirmation that the statements made in the application are true and complete.

(c) The information submitted in the application shall, when specifically requested by the Department, include an analysis of the characteristics, properties and volume of the air contaminants based upon source or stack samples of the air contaminants taken under normal operating conditions. Failure to supply information required or deemed necessary by the Department to enable it to act upon the permit or compliance schedule application shall result in denial of the permit or shall result in disapproval of the compliance schedule.

(d) An application for a permit or compliance schedule may include one or more affected facilities provided that all are contained within one (1) source. A person may apply for an amended permit to include new affected facilities provided that such new facilities are within the same source.

(3) (a) In considering permit or compliance schedule applications, the Department shall determine if emission standards and ambient standards are met or will be met upon completion of the compliance schedule. In no case shall a permit be issued or compliance schedule approved where it can be shown either through diffusion calculations or actual ambient air quality monitoring, performed according to methods prescribed by the Department, that the source will prevent or interfere with the attainment or maintenance of state or federal air quality standards. In cases where no emission standards have been prescribed by regulation, the Department shall require the use of all available, practical and reasonable methods to prevent and control air pollution.

(b) In the event any person or persons alleges themselves under oath to be adversely affected by a proposed or existing source or other physical conditions, the Department shall afford such persons a hearing to determine whether the permit to construct or to operate should be issued or denied.

(c) Compliance schedules herein shall be subject to approval of the Department. If for any reason, the Department and the source are unable to negotiate a mutually acceptable schedule, the Department will propose a compliance schedule which will be subjected to a hearing pursuant to KRS 224.083. After considering the hearing report, the Department shall issue an appropriate compliance schedule. Once approved and/or issued, compliance schedules, including all increments of progress, shall be legally enforceable.

(4) Permits and compliance schedules issued hereunder shall be subject to such terms and conditions set forth and embodied in the permit or compliance schedule as the Department shall deem necessary to insure compliance with its standards. Such terms and conditions may include maintenance and availability of records relating to operations which may cause or contribute to air pollution including periodic source or stack sampling of the affected facilities.

(5) Permits issued hereunder shall be subject to revocation or modification by the Department for the following causes:

(a) Failure to comply with the terms and conditions of the permit;

(b) Failure to comply with emission standards applicable to an affected facility;

(c) Failure to comply with the ambient air quality standards for the area in which the source is located.

(d) Failure to report process or equipment changes which result in an emission increase.

(6) This section shall not apply to those sources listed in Subsection (4) of Section 6 of this regulation.

(7) Permits and compliance schedules issued under this regulation are not transferable.

Section 8. Monitoring Records and Reporting

(1) The Department may require the owner or operator of any affected facility to install, use, and maintain stack gas and ambient air monitoring equipment in accordance with such methods as the Department shall prescribe, establish and maintain records of same and make periodic emission reports at intervals prescribed by the Department. Requirements for specific affected facilities are contained in applicable regulations.

Section 9. Sampling and Testing Methods

(1) The Department may require the owner or operator of any affected facility to sample emissions in accordance with such methods as the Department shall prescribe. All tests shall be made under the direction of persons qualified by training and/or experience in the field of air pollution control.

(2) The Department may conduct tests of emissions of air contaminants from any source. Upon request of the Department the person responsible for the source to be tested shall provide necessary openings in the stacks or ducts and such safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.

Section 10. Emissions during Shutdown and Malfunction of Control Equipment

(1) Emissions which, due to shutdown or malfunction of air pollution control equipment, temporarily exceed the standard set forth by the Department shall be deemed in violation of such standards unless the requirements of this section are satisfied and the determinations specified in Subsection (4) of this section are made.

(2) When emissions during any planned shutdown and ensuing startup of air pollution control equipment or part thereof exceed the standards, the owner or operator of the source shall notify the Director no later than three (3) days before the planned shutdown. However, if the shutdown is necessitated by events which the owner or operator could not reasonably have forseen three (3) days before the shutdown, then such

notification shall be given immediately following the determination to shutdown. The notice shall be in writing and shall specify the name of the air contaminant source, its location, the address and telephone number of the person responsible for the source, the reasons for and duration of the proposed shutdown, the nature of the action to be taken during shutdown, the date and time for the action, the physical and chemical composition, rate and concentration of the emissions during such shutdown and ensuing startup, the basis for determination that such shutdown is necessary, and the measures which will be taken to minimize the extent and duration of the emissions during such shutdown and ensuing startup.

(3) When emissions due to sudden and unforeseen malfunction (or to unforeseen shutdown associated with malfunction) of air pollution control equipment are or may be in excess of the standards, the owner or operator shall notify the Director by telephone as promptly as possible, and shall cause written notice when requested by the Director to be sent to the Director. Such notice shall specify the name of the source, its location, the address and telephone number of the person responsible for the source, the nature and cause of the malfunction, the date and time when such malfunction was first observed, the expected duration, the nature of the action to be taken to correct the malfunction, and an estimate of the physical and chemical composition, rate and concentration of the emission.

(4) Nothing in this section shall relieve a source from compliance with the standards set forth by the Department unless the Director determines that:

(a) The occurrence in question did not result from the failure by the owner or operator of the source to operate and maintain properly the air pollution control equipment;

(b) All reasonable steps were taken to correct, as expeditiously as practicable, the conditions causing the emissions to exceed the standards, including the use of off-shift labor and overtime if necessary, and;

(c) All reasonable steps were taken to minimize the emissions resulting from the occurrence.

(5) The Director shall notify the owner or operator of the source of the determination required by this section no later than sixty (60) days after the date that all information required by this section has been submitted. Failure of the Director to give such notification within sixty (60) day period shall have the same effect as a determination that the occurrence is deemed not be a violation of the standards.

(6) Nothing in this section shall be construed to restrict the Secretary's discretion to take, at any time, appropriate enforcement action under

KRS 224.071, if upon information supplied to him pursuant to this section, or otherwise available to him, he determines that such action is necessary to protect the health or welfare.

Section 11. Prohibition of Air Pollution

No person shall permit or cause air pollution as defined in Section 2 of this regulation.

Section 12. Circumvention

No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which would otherwise violate these regulations.

DEPARTMENT FOR NATURAL RESOURCES AND
ENVIRONMENTAL PROTECTION
Bureau of Environmental Quality
Division of Air Pollution
401 KAR 3:020 Ambient Air Quality Standards

Section 1. Purpose of Standards and Expression of Non-degradation Intention

(1) (a) Primary ambient air quality standards mean those levels of air quality which the Department judges are necessary, with an adequate margin of safety, to protect the public health.

(b) Secondary ambient air quality standards mean those levels of air quality which the Department judges necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

(2) In the establishment of these standards, it is the intention of the Department to prohibit further significant and avoidable deterioration of air quality in areas where air quality presently exists which is numerically equal to or less than the standards expressed herein.

(3) No person shall violate, or interfere with the attainment or maintenance of, ambient air quality standards as specified in Section 4 of this regulation.

Section 2. Applicability

The primary and secondary ambient air quality standards stated in Section 4 shall apply at any single point location.

Section 3. Definitions

As used in this regulation; all terms not defined herein shall have the meaning given them in 401 KAR 3:010.

(1) "Ambient Air" means that portion of the atmosphere, external to buildings, to which the general public has access.

✓ (2) "Reference Method" means a method of sampling and analyzing for an air pollutant as specified by the United States Environmental Protection Agency.

(3) "Equivalent Method" means any method of sampling and analyzing of an air pollutant which can be demonstrated to the United States Environmental Protection Agency's satisfaction to have a consistent relationship to the reference method.

(4) "Ambient Air Quality Standard" means the numerical expression of a goal to be achieved in a stated time through the application of appropriate preventive and/or control measures. It consists of two parts:

  (a) a specified concentration level for a particular air contaminant, and

  (b) the time averaging interval over which that concentration level is measured.

(5) "Annual Mean" means an average determined on the basis of any consecutive twelve (12) month interval.

(6) "Three (3) Month Average" means an average determined on the basis of any consecutive three (3) month interval.

(7) "Eight (8) Hour Average" means an average determined on the basis of any consecutive eight (8) hour interval.

(8) "Twelve (12) Hour Average" means an average determined on the basis of any consecutive twelve (12) hour interval.

(9) "One (1) Week Average" means an average determined on the basis of any consecutive seven (7) day interval.

(10) "Maximum" means an ambient air quality standard which shall not be exceeded more than once per year providing that the averages exceeding the standard do not contain any common hourly data points.

(11) "Odor" means the property of an air contaminant that can be detected by the sense of smell.

(12) "Soiling Index" means a measure of the soiling property of suspended particles in air determined by drawing a measured volume of air through a known area of Whatman No. 4 filter for a measured period of time, expressed as COH/1000 linear feet.

(13) "Standard Condition" means a reference temperature of 25 degrees Celsius and a reference pressure of 760 millimeters of mercury.

~~(14)~~ "Year" means a calendar year.

(15) "Dilution" means the number of volumes of odorless air that must be added to a like volume of odor-bearing air to reduce the odor of the resulting mixture to just below the odor threshold level.

Section 4. Ambient Air Quality Standards

The primary and secondary ambient air quality standards for sulfur oxides, particulate matter, carbon monoxide, total nonmethane hydrocarbons, nitrogen dioxide, hydrogen sulfide, hydrogen fluoride, total fluorides and odors measured by reference methods specified by the Department, or be equivalent methods, are:

(1) Sulfur Oxides (sulfur dioxide):

(a) Primary standards:

1. 80 micrograms per cubic meter (0.03 ppm) - annual arithmetic mean.

2. 365 micrograms per cubic meter (0.14 ppm) - maximum 24-hour average not to be exceeded more than once per year.

(b) Secondary standards:

1. 1300 micrograms per cubic meter (0.50 ppm) - maximum 3-hour average not to be exceeded more than once per year.

(2) Particulate Matter:

(a) Primary standards:

1. 75 micrograms per cubic meter - annual geometric mean.

2. 260 micrograms per cubic meter - maximum 24-hour average not to be exceeded more than once per year.

3. 6.0 COH/1000 LF - maximum 24-hour average of soiling index not to be exceeded more than once per year.

(b) Secondary standards:

1. 60 micrograms per cubic meter - annual geometric mean, to be used as a guide in assessing implementation plans to achieve the 24-hour standard.

2. 150 micrograms per cubic meter - maximum 24-hour average not to be exceeded more than once per year.

3. 0.4 COH/1000 LF - annual arithmetic mean of soiling index

4. 0.5 COH/1000 LF - maximum three-month average of soiling index not to be exceeded more than once per year.

5. 0.3 COH/1000 LF - maximum 24-hour average not to be exceeded more than once per year.

6. 15 tons per square mile per month (5.25 g/sq.m/mo) - maximum three-month average of settleable particulates (total water solubles and insolubles) not to be exceeded more than once per year.

(3) Carbon Monoxide:

Primary and secondary standards:

(a) 10 milligrams per cubic meter (9 ppm) - maximum 8-hour average not to be exceeded more than once per year.

(b) 40 milligrams per cubic meter (35 ppm) - maximum 1-hour average not to be exceeded more than once per year.

(4) Photochemical Oxidants:

Measured as O_3 and corrected for interferences due to nitrogen oxides and sulfur dioxide.

Primary and secondary standards: 160 micrograms per cubic meter (0.08 ppm) - maximum 1-hour average not to be exceeded more than once per year.

(5) Hydrocarbons:

Measured as CH_4 and corrected for methane, to be used as a guide in devising implementation plans to achieve photochemical oxidants standards.

Primary and secondary standards: 160 micrograms per cubic meter (0.24 ppm) - maximum 3-hour average (6 to 9 a.m.) not to be exceeded more than once per year.

(6) Nitrogen Dioxide:

Primary and secondary standards: 100 micrograms per cubic meter (0.05ppm) - annual arithmetic mean.

Secondary standards: 14 micrograms per cubic meter (0.01 ppm) - maximum 1-hour average not to be exceeded more than once per year.

(8) Gaseous Fluorides (expressed as HF):

Primary standards:

(a) 0.82 micrograms per cubic meter (1 ppb) - maximum 1-month average not to be exceeded more than once per year.

(b) 1.64 micrograms per cubic meter (2 ppb) - maximum 1-week average not to be exceeded more than once per year.

(c) 2.86 micrograms per cubic meter (3.5 ppb) - maximum 24-hour average not to be exceeded more than once per year.

(d) 3.68 micrograms per cubic meter (4.5 ppb) - maximum 12-hour average not to be exceeded more than once per year.

(9) Total Fluorides:

Dry weight basis (as fluoride ion) in and on forage for consumption by grazing ruminants

Primary standards:

(a) Not to exceed 40 ppm (w/w) - average concentration of monthly samples over growing season (not to exceed 6 consecutive months).

(b) Not to exceed 60 ppm (w/w) - 2-month average.

(c) Not to exceed 80 ppm (w/w) - 1-month average.

(10) Odors:

Secondary standard: At any time not to equal or exceed 7 dilutions.

Section 5. Time Schedule for Achieving Air Quality Standards

Primary and secondary air quality standards shall be achieved no later than April 9, 1975; except for sulfur dioxide which shall be achieved no later than July 1, 1977.

Section 6. Methods of Measurement

Air contaminants shall be measured by the reference or equivalent methods and at such frequency as specified in United States Environmental Protection Agency regulations on National Primary and Secondary Ambient Air Quality Standards (40 CFR 50) and on Preparation of Implementation Plans (40 CFR 51).

DEPARTMENT FOR NATURAL RESOURCES AND
ENVIRONMENTAL PROTECTION
Bureau of Environmental Quality
Division of Air Pollution
401 KAR 3:030 Emergency Episodes

Section 1. Purpose

Notwithstanding any other provision of the air pollution control regulations, this episode regulation is designed to prevent ambient pollutant concentrations at any location from reaching the following levels which could cause significant harm to the health of persons.

(1) SO_2: 2,620 μg/cubic meter (1.0 ppm), 24-hour average.

(2) Particulate: 1,000 μg/cubic meter or 8 COHs/1000 linear feet, 24-hour average.

(3) SO_2 and Particulate combined: product of SO_2 ppm (24-hour average) and COHs/1000 linear feet (24-hour average) equal to 1.5; or product of SO_2 μg/cubic meter (24-hour average) and the particulate μg/cubic meter (24-hour average) equal to 490,000.0.

(4) CO: 57.5 mg/cubic meter (50 ppm), 8-hour average. 86.3 mg/cubic meter (75 ppm), 4-hour average. 144 mg/cubic meter (125 ppm), 1-hour average.

(5) Photochemical Oxidants: 1,200 μg/cubic meter (0.6 ppm), 1-hour average.

(6) NO_2: 3,750 μg/cubic meter (2.0 ppm), 1-hour average. 938 μg/cubic meter (0.5 ppm), 24-hour average.

Section 2. Episode Criteria

Conditions justifying the proclamation of an air pollution alert, air pollution warning, or air pollution emergency shall be deemed to exist whenever the department determines that the accumulation of air contaminants in any place is attaining or has attained levels which could, if such levels are sustained or exceeded, present a threat to the health of the public. In making this determination, the department shall be guided by the following criteria:

(1) Air Pollution forecast: An internal watch by the Department shall be actuated by a National Weather Service Advisory that an Atmospheric Stagnation Advisory is in effect.

(2) Alert: An alert level is that concentration of pollutants at which first stage control actions are to begin. An alert will be declared when any one of the following levels is reached at any monitoring site and meteorological conditions are such that the pollutant concentrations can be expected to remain at these levels for twelve (12) or more hours or increase, or in the case of oxidants the situation is likely to reoccur within the next twenty-four (24) hours, unless control actions are taken.

  (a) SO_2: 800 μg/cubic meter (0.3 ppm), 24-hour average.

  (b) Particulate: 3.0 COHs/1000 linear feet or 375 μg/cubic meter, 24-hour average.

  (c) SO_2 and particulate combined: product of SO_2 ppm, (24-hour average) and COHs/1000 linear feet (24-hour average) equal to 0.2; or product of SO_2 μg/cubic meter (24-hour average) and particulate, $\mu g/m^3$ (24-hour average) equal to 65,000.

  (d) CO: 17 mg/cubic meter (15 ppm), 8-hour average.

  (e) Oxidants (O_3): 200 μg/cubic meter (0.1 ppm), 1-hour average.

  (f) NO_2: 1130 μg/cubic meter (0.6 ppm), 1-hour average; 282 μg/cubic meter (0.15 ppm), 24-hour average.

(3) Warning: A warning level indicates that air quality is continuing to degrade and that additional control actions are necessary. A warning will be declared when any one of the following levels is reached at any monitoring site and meteorological conditions are such that pollutant concentrations can be expected to remain at these levels for twelve (12) or more hours or increase, or in the case of oxidants the situation is likely to reoccur with the next twenty-four (24) hours, unless control actions are taken.

  (a) SO_2: 1600 μg/cubic meter (0.6 ppm), 24-hour average.

  (b) Particulate: 5.0 COHs/1000 linear feet or 625 μg/cubic meter, 24-hour average.

(c) SO_2 and particulate combined - product of SO_2 ppm, (24-hour average) and COHs/1000 linear feet (24-hour average) equal to 0.8; or product of SO_2 μg/cubic meter (24-hour average) and particulate μg/cubic meter (24-hour average) equal to 261,000.

(d) CO: 34 mg/cubic meter (30 ppm), 8-hour average.

(e) Oxidants (O_3): 800 μg/cubic meter (0.4 ppm), 1-hour average.

(f) NO_2: 2,260 μg/cubic meter (1.2 ppm), 1-hour average; 565 μg/cubic meter (0.3 ppm), 24-hour average.

(4) Emergency: An emergency level indicates that air quality is continuing to degrade to a level that should never be reached and that the most stringent control actions are necessary. An emergency will be declared when any one of the following conditions are such that this condition can be expected to continue for twelve (12) or more hours or increase, or in the case of oxidants the situation is likely to reoccur within the next twenty-four (24) hours, unless control actions are taken.

(a) SO_2: 2,100 μg/cubic meter (0.8 ppm), 24-hour average.

(b) Particulate: 7.0 COHs/1000 linear feet or 875 μg/cubic meter, 24-hour average.

(c) SO_2 and particulates combined: product of SO_2 ppm (24-hour average) and COHs/1000 linear feet (24-hour average) equal to 1.2; or product of SO_2 μg/cubic meter (24-hour average) and particulate μg/cubic meter (24-hour average) equal to 393,000.

(d) CO: 46 mg/cubic meter (40 ppm), 8-hour average.

(e) Oxidants (O_3): 1200 μg/cubic meter (0.6 ppm), 1-hour average.

(f) NO_2: 3,000 μg/cubic meter (1.6 ppm), 1-hour average; 750 μg/cubic meter (0.4 ppm), 24-hour average.

(5) Termination: Any status declared by the application to these criteria will remain in effect until the criteria for that level are no longer met. At such time the next lower appropriate status will be assumed.

(6) An episode status based on the deterioration of air quality alone may be declared. An air stagnation advisory need not be in effect.

(7) An appropriate episode status shall be declared when any monitoring site records ambient air quality levels as designated in the episode criteria herein. The criteria shall be applied to individual monitoring sites and not to area wide air quality.

Section 3. Emission Reduction Plans

(1) Air Pollution Alert. When the director declares an air pollution alert, any person responsible for the operation of a source of air contaminants as set forth in Section 5 shall take all air pollution alert actions required for such sources of air contaminants and shall put into effect the preplanned strategy for an air pollution alert.

(2) Air Pollution Warning. When the director declares an air pollution warning, any person responsible for the operation of a source of air contaminants as set forth in Section 6 shall take all air pollution warning actions required for such sources of air contaminants and shall put into effect the preplanned strategy for an air pollution warning.

(3) Air Pollution Emergency. When the director declares an air pollution emergency, any person responsible for the operation of a source of air contaminants described in Section 7 shall take all air pollution emergency actions required for such sources of air contaminants and shall put into effect the preplanned strategy for an air pollution emergency.

Section 4. Preplanned Abatement Strategies

(1) Any person responsible for the operation of a source of air pollutants as set forth in Sections 5 to 7 shall prepare standby plans for reducing the emission of air pollutants during episode periods (air pollution alert, warning and emergency). Standby plans shall be designed to reduce or eliminate emission of air pollutants in accordance with the objectives set forth in Sections 5 to 7 of this regulation.

(2) Any person responsible for the operation of a source of air pollutants not set forth under Subsection (1) of this section shall, when requested by the director in writing, prepare standby plans for reducing the emission of air pollutants during episode periods. Standby plans shall be designed to reduce or eliminate emissions of air pollutants in accordance with the objectives set forth in Sections 5 to 7.

(3) Standby plans as required under Subsections (1) and (2) of this section shall be in writing and identify the source of air pollutants, the approximate amount of reduction of pollutants, and a brief description of the manner in which the reduction will be achieved during episode periods.

(4) During episode periods, standby plans required by this section shall be made available on the premises to any person authorized to enforce the provisions of the standby plan.

(5) Standby plans required by this section shall be submitted to the department upon request within thirty (30) days of the receipt of such request; such plans shall be subject to review and approval by the department. If in the opinion of the department, a plan does not effectively carry out the objectives as set forth in Sections 5 to 7, the department may disapprove it, state its reasons for disapproval and order the preparation of an amended plan within the time period specified in the order.

Section 5. Abatement Strategies Emission Reduction Plans: Alert Level

(1) General:

(a) There shall be no open burning by any person of tree waste, vegetation, refuse, or debris in any form.

(b) The use of incinerators for the disposal of any form of solid waste shall be limited to the hours of 12 noon and 4 p.m., local time.

(c) Persons operating fuel-burning equipment which requires boiler lancing or soot blowing shall perform such operations only between the hours of 12 noon and 4 p.m., local time.

(d) Persons operating motor vehicles should eliminate all unnecessary operations.

(2) Source curtailment. Any person responsible for the operation of a source of air contaminant listed below shall take all required control actions for this alert level.

(a) When the source of air contaminant is coal or oil fired electric power generating facilities:

1. Substantial reduction by utilization of fuels having low ash and sulfur content.

2. Maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing.

3. Substantial reduction by diverting electric power generation to facilities outside of alert area.

(b) When the source of air contaminant is coal and oil fired process steam generating facilities:

1. Substantial reduction by utilization of fuels having low ash and sulfur content.

2. Maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing.

3. Substantial reduction of steam load demands consistent with continuing plant operations.

(c) When the source of air contaminant is manufacturing industries of the following classifications: primary metals industry, petroleum refining operations, chemical industries, mineral processing industries, paper and allied products and grain industry:

1. Substantial reduction of air contaminants from manufacturing operations by curtailing, postponing, or deferring production and all operations.

2. Maximum reduction by deferring trade waste disposal operations which emit solid particles, gas vapors or malodorous substances.

3. Maximum reduction of heat load demands for processing.

4. Maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing or soot blowing.

Section 6. Emission Reduction Plans: Warning Level

(1) General

(a) There shall be no open burning by any person of tree waste, vegetation, refuse or debris in any form.

(b) The use of incinerators for the disposal of any form of solid waste or liquid waste shall be prohibited.

(c) Persons operating fuel-burning equipment which requires boiler lancing or soot blowing shall perform such operations only between the hours of 12 noon and 4 p.m. local time.

(d) Persons operating motor vehicles must reduce operations by the use of car pools and increased use of public transportation and the elimination of unnecessary operation.

(2) Source curtailment. Any person responsible for the operation of a source of air contaminant listed below shall take all required control actions for this warning level.

(a) When the source of air contaminant is coal or oil fired electric power generating facilities:

1. Maximum reduction by utilization of fuels having lowest ash and sulfur content.

2. Maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing.

3. Maximum reduction by diverting electric power generation to facilities outside of warning area.

(b) When the source of air contaminant is coal and oil fired process steam generating facilities:

1. Maximum reduction by utilization of fuels having the lowest available ash and sulfur content.

2. Maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing.

3. Making ready for use a plan of action to be taken if an emergency develops.

(c) When the source of air contaminant is manufacturing industries which may require considerable lead time for shut-down including the following classifications: petroleum refining, chemical industries, primary metals industries, glass industries, paper and allied products:

1. Maximum reduction of air contaminants from manufacturing operations by, if necessary, assuming reasonable economic hardships by postponing production and allied operation.

2. Maximum reduction by deferring trade waste disposal operations which emit solid particles, gases, vapors, or malodorous substances.

3. Maximum reduction of heat load demands for processing.

4. Maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing.

(d) When the source of air contaminant is manufacturing industries which may require relatively short lead times for shut-down including the following classifications: primary metals industries, chemical industries, mineral processing industries and grain industry:

1. Elimination of air contaminants from manufacturing operations by ceasing, curtailing, postponing, or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment.

2. Elimination of air contaminants from the trade waste disposal processes which emit solid particles, gases, vapors, or malodorous substances.

3. Maximum reduction of heat load demands for processing.

4. Maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing or soot blowing.

Section 7. Emission Reduction Plans: Emergency Level

(1) General

(a) There shall be no open burning by any person of tree waste, vegetation, refuse, or debris in any form.

(b) The use of incinerators for the disposal of any form of solid or liquid waste shall be prohibited.

(c) All places of employment described below shall immediately cease operations:

1. Mining and quarrying of nonmetallic minerals.

2. All construction work except that which must proceed to avoid emergent physical harm.

3. All manufacturing establishments except those required to have in force an air pollution emergency plan.

4. Wholesale trade establishments: i.e., places of business primarily engaged in selling merchandise to retailers, to industrial, commercial, institutional or professional users, or to other wholesalers, or acting as agents in buying merchandise for or selling merchandise to such persons or companies.

5. All offices of local, county, and state government including authorities, joint meetings and other public bodies excepting such agencies which are determined by the chief administrative officer of local, county, or state government, authorities, joint meetings and other public bodies to be vital for public safety and welfare and the enforcement of the provisions of this order.

6. All retail trade establishments except pharmacies and stores primarily engaged in the sale of food.

7. Banks; credit agencies other than banks: securities and commodities brokers, dealers, and exchanges and services;

offices of insurance carriers, agents and brokers; real estate offices.

8. Wholesale and retail laundries, laundry services; photographic studios; beauty shops, barbershops, shoe repair shops.

9. Advertising offices; consumer credit reporting, adjustment and collection agencies; duplication, addressing, blueprinting; photocopying, mailing list and stenographic services; equipment rental services, commercial testing laboratories.

10. Automobile repair, automobile services, garages.

11. Establishments rendering amusement and recreation services including motion picture theaters.

12. Elementary and secondary schools, colleges, universities, professional schools, junior colleges, vocational schools, and public and private libraries.

(d) All commercial and manufacturing establishments not included in this order will institute such actions as will result in maximum reduction of air contaminants from their operations by ceasing, curtailing, or postponing operations which emit air contaminants, to the extent possible without causing injury to persons or damage to equipment.

(e) The use of motor vehicles is prohibited except in emergencies with the approval of local or state police.

(2) Source curtailment. Any person responsible for the operation of a source of air contaminant listed below shall take all required control actions for this emergency level.

(a) When the source of air contaminant is coal or oil fired electric power generating facilities:

1. Maximum reduction by utilization of fuels having lowest ash and sulfur content.

2. Maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing.

3. Maximum reduction by diverting electric power generation to facilities outside of emergency areas.

(b) When the source of air contaminant is coal and oil fired process steam generating facilities:

1. Maximum reduction by reducing heat and steam demands to absolute

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necessities consistent with preventing equipment damage.

2. Maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing and soot blowing.

3. Taking the action called for in the emergency plan.

(c) When the source of air contaminant is manufacturing industries of the following classifications: primary metal industries, petroleum refining, chemical industries, mineral processing industries, grain industry, paper and allied products:

1. Elimination of air contaminants from manufacturing operations by ceasing, curtailing, postponing or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment.

2. Elimination of air contaminants from trade waste disposal processes which emit solid particles, gases, vapors, or malodorous substances.

3. Maximum utilization of mid-day (12 noon to 4 p.m.) atmospheric turbulence for boiler lancing or soot blowing.

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DEPARTMENT FOR NATURAL RESOURCES AND
ENVIRONMENTAL PROTECTION
Bureau for Environmental Quality
Division of Air Pollution

401 KAR 3:040 Control of Emission of Hazardous Pollutants

Section 1. Applicability

The provisions of this regulation apply to the owner or operator of any stationary source for which a standard is prescribed under this regulation. New or modified sources must comply with all standards upon commencing operation. Existing sources shall comply within 90 days after the effective date of this regulation.

Section 2. Definitions

As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 3:010.

(a) "Alternative Method" means any method of sampling and analyzing for an air pollutant which is not a reference method or an equivalent method but which has been demonstrated to the United States Environmental Protection Agency's satisfaction to produce, in specific cases, results adequate for its determination of compliance.

(b) "Commenced" means that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

(c) "Construction" means fabrication, erection, or installation of a stationary source.

(d) "Equivalent Method" means any method of sampling and analyzing for an air pollutant which has been demonstrated to the United States Environmental Protection Agency's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

(e) "Existing Source" means any stationary source which is not a new source.

(f) "Modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any hazardous air pollutant emitted by such source or which results in the emission of any hazardous air pollutant not previously emitted, except that:

1. Routine maintenance, repair, and replacement shall not be

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considered physical changes and

2. The following shall not be considered a change in the method of operation:

   a. An increase in the production rate, if such increase does not exceed the operating design capacity of the stationary source;

   b. An increase in hours of operation.

(g) "New source" means any stationary source, the construction or modification of which is commenced after the effective date of this regulation.

(h) "Owner or operator" means any person who owns, leases, operates, controls, or supervises a stationary source.

(i) "Reference Method" means any method of sampling and analyzing for an air pollutant, as specified by the United States Environmental Protection Agency regulation on National Emission Standards for Hazardous Air Pollutants (40 CFR 61).

(j) "Startup" means the setting in operation of a stationary source for any purpose.

(k) "Standard" means an emission standard for a hazardous air pollutant adopted under this regulation.

(l) "Stationary source" means any building, structure, facility, or installation which emits or may emit any air pollutant which has been designated as hazardous by the Department.

Section 3. Potential Hazardous Emissions

Persons responsible for a source from which hazardous matter may be emitted including but not limited to, antimony, arsenic, asbestos, beryllium, bismuth, lead, mercury, silica, tin, and compounds of such materials, and other toxic materials shall give the utmost care and consideration to the potential harmful effects of the emissions resulting from such activities. Evaluation of such facilities as to adequacy, and emission potential will be made on an individual basis by the Department.

Section 4. Emission Standard for Asbestos

(1) Applicability

The provisions of this section are applicable to those sources specified in Subsection (3) of this section.

(2) Definitions

Terms used in this section not defined herein shall have the meaning given to them in 401 KAR 3:010 and in Section 2 of this regulation.

(a) "Asbestos" means actinolite, amosite, anthophylite, chrysotile, crocidolite, tremolite.

(b) "Asbestos Material" means asbestos or any material containing asbestos.

(c) "Particulate Asbestos Material" means finely divided particles of asbestos material.

(d) "Asbestos Tailings" mean any solid waste product of asbestos mining or milling operations which contains asbestos.

(e) "Outside Air" means the air outside buildings and structures.

(f) "Visible Emissions" mean any emissions which are visually detectable without the aid of instruments and which contain particulate asbestos material.

(g) "Asbestos Mill" means any facility engaged in the conversion or any intermediate step in the conversion of asbestos ore into commercial asbestos. Outside storage of asbestos materials is not considered a part of such facility.

(h) "Commercial Asbestos" means any variety of asbestos which is produced by extracting asbestos from asbestos ore.

(i) "Manufacturing" means the combining of commercial asbestos, or in the case of woven friction products the combining of textiles containing commercial asbestos, with any other material(s), including commercial asbestos, and the processing of this combination into a product as specified in Subsection (3)(c) of this section.

(j) "Demolition" means the wrecking or removal of any load-supporting structural member.

(3) Emission Standard

(a) Asbestos mills: There shall be no visible emissions to the outside air from any asbestos mill except as provided in Paragraph (f) of this subsection.

(b) Roadways: The surfacing of roadways with asbestos tailings is prohibited, except for temporary roadways on an area of asbestos ore deposits. The deposition of asbestos tailings on roadways covered with snow or ice is considered "surfacing."

(c) Manufacturing: There shall be no visible emissions to the outside air, except as provided in Paragraph (f) of this subsection, from any building or structure in which the following operations are conducted outside of buildings or structures:

1. The manufacture of cloth, cord, wicks, tubing, tape, twine, rope, thread, yarn, roving, lap or other textile materials.
2. The manufacture of cement products.
3. The manufacture of fireproofing and insulating materials.
4. The manufacture of friction products.
5. The manufacture of paper, millboard, and felt.
6. The manufacture of floor tile.
7. The manufacture of paints, coatings, caulks, adhesives, sealants.
8. The manufacture of plastics and rubber materials.
9. The manufacture of chlorine.

(d) Demolition: Any owner or operator of a demolition operation who intends to demolish any institutional, commercial, or industrial building (including apartment buildings having more than four (4) dwelling units), structure, facility, installation or portion thereof which contains any boiler, pipe, or load-supporting structural member that is insulated or fireproofed with friable asbestos material shall comply with the requirements set forth in this subsection.

1. Notice of intention to demolish shall be provided to the Department by the owner or operator of the demolition operation. Such notice shall be postmarked at least 10 days prior to commencement of demolition or anytime prior to commencement of demolition subject to Paragraph (d) 4 of this subsection.

2. Such notice shall include the following information:

   a. Name of owner or operator,

   b. Address of owner or operator,

   c. Description of the building, structure, facility, or installation to be demolished,

   d. Address or location of the building, structure, facility or installation,

   e. Scheduled starting and completion dates of demolition,

   f. Method of demolition to be employed,

   g. Procedures to be employed to meet the requirements of this section.

3. The following procedures shall be used to prevent emissions of particulate asbestos material to outside air:

   a. Friable asbestos material, used to insultate or fireproof any boiler, pipe, or load-supporting structural member, shall be wetted and removed from any building, structure, facility, or installation subject to this subsection before wrecking of load-supporting structural members is commenced. Boiler, pipe or load-supporting structural members that are insulated or fireproofed with friable asbestos materials may be removed as units or in sections without stripping or wetting, except that where the boiler, pipe or load-supporting structural member is cut or disjointed, the exposed friable asbestos materials shall be wetted. Friable asbestos debris shall be wetted adequately to insure that such debris remains wet during all stages of demolition and related handling operations.

   b. No pipe or load-supporting structural member that is covered with friable asbestos insulating or fireproofing material shall be dropped or thrown to the ground from any building, structure, facility, or installation subject to this subsection, but shall be carefully lowered or taken to ground level.

   c. No friable asbestos debris shall be dropped or thrown to the ground from any building, structure, facility, or installation subject to this paragraph or from any floor to any floor below. For buildings, structures facilities, or installations, fifty (50) feet or greater in height, friable asbestos debris shall be transported to the ground via dust-tight chutes or containers.

4. Any owner or operator of a demolition operation who intends to demolish a building, structure, facility, or installation to which the provisions of this subsection would be applicable but which has been declared by proper State or local authority to be structurally unsound and which is in danger of imminent collapse is exempt from the requirements of this section other than the reporting requirements specified by Paragraph (d)1. of this subsection and the wetting of friable asbestos debris as specified by Paragraph (d)3.a. of this subsection.

(e) Spraying: There shall be no visible emissions to the outside air from the spray-on application of materials containing more than one (1) percent asbestos, on a dry weight basis, used to insulate or fireproof equipment and machinery, except as provided in Paragraph (f) of this subsection. Spray-on materials used to insulate or fireproof buildings, structures, pipes, and conduits shall contain less that one (1) percent asbestos on a dry weight basis. Any owner or operator who intends to spray asbestos materials to insulate or fireproof buildings, structures, pips, conduits, equipment, and machinery shall report such intention to the Department as least twenty (20) days prior to the commencement of the spraying operation. Such report shall include the follwoing information:

1. Name of owner or operator,

2. Address of owner or operator,

3. Location of spraying operation,

4. Procedures to be followed to meet the requirements of this paragraph.

(f) Rather than meet the no-visible-emission requirements of Paragraphs (a), (c) and (e) of this subsection, an owner or operator may elect to use the methods specified by Subsection (4) of this section to clean emissions containing particulate asbestos material before such emissions escape to, or are vented to, the outside air.

(g) Where the presence of uncombined water is the sole reason for failure to meet the no-visible-emission requirement of Paragraph (a), (c) or (e) of this subsection, such failure shall not be a violation of such emission requirements.

(4) Air Cleaning

If air-cleaning is elected, as provided by Subsection (3) (f) or this section, the requirements of this subsection shall be met.

(a) Fabric filter collection devices shall be used, except as noted in Paragraphs (b) and (c) of this subsection. Such devices shall be operated at a pressure drop of no more than 4 inches water gauge, as measured across the filter fabric. The airflow permeability, as determined by a method specified by the Department must not exceed thirty (30) cubic feet/min/square foot for woven fabrics or thirty-five (35) cubic feet/min/square foot for felted fabrics, except that forty (40) cubic feet/min/square foot for woven and forty-five (45) cubic feet/min/square foot for felted fabric is allowed for filtering air from asbestos ore dryers. Each square yard of felted fabric shall weigh at least forteen (14) ounces and be at least one-sixteenth (1/16) inch thick throughout. Synthetic fabric shall not contain fill yarn other than that which is spun.

(b) If the use of fabric filters creates a fire or explosion hazard, the Department may authorize the use of wet collections designed to operate with a unit contaction energy of at least forty (40) inches water gauge pressure.

(c) The Department may authorize the use of filtering equipment other than that described in Paragraphs (a) and (b) of this subsection if the owner or operator demonstrates to the satisfaction of the Department that the filtering of particulate asbestos material is equivalent to that of the described equipment.

(d) All air-cleaning equipment authorized by this subsection shall be properly installed, used, operated, and maintained. Bypass devices may be used only during upset or emergency conditions and then only for so long as it takes to shut down the operation generating the particulate asbestos material.

(5) Reporting

The owner or operator of any existing source to which this section is applicable shall, within ninety (90) days after the effective date of this regulation, provide the following information to the Department.

(a) A description of the emission control equipemtn used for each process;

(b) If a fabric filter device is used to control emissions, the pressure drop across the fabric filter in inches water gauge.

1. If the fabric filter device utilizes a woven fabric, the air flow permeability in cubic feet/min/square foot; and if the fabric is synthetic, indicate whether the fill yarn is spun or not spun.

2. If the fabric filter device utilizes a felted fabric, the density in ounces/square yard, the minimum thickness in inches, and the airflow permeability in cubic feet/min/square foot.

Section 5. Emission Standard for Beryllium

(1) Applicability

The provisions of this section are applicable to the following stationary sources:

(a) Extraction plants, ceramic plants, foundies, incinerators, and propellant plants which process beryllium ore, beryllium, beryllium oxide, beryllium alloys, or beryllium-containing waste.

(b) Machine shops which process beryllium, beryllium oxides, or any alloy when such alloy contains more than 5 percent beryllium by weight.

(2) Definitions

Terms used in this section not defined herein shall have the meaning given to them in 401 KAR 3:010 and in Section 2 of this regulation.

(a) "Beryllium" means the element beryllium. Where weights or concentrations are specified, such weights or concentrations apply to beryllium only, excluding the weight or concentration of any associated elements.

(b) "Extraction Plant" means a facility chemically processing beryllium ore to beryllium metal alloy, or oxide, or performing any of the intermediate steps in these processes.

(c) "Beryllium Ore" means any naturally occurring material mined or gathered for its beryllium content.

(d) "Machine shop" means a facility performing cutting, grinding, turning, honing, milling, deburring, lapping, electrochemical machining, etching, or other similar operations.

(e) "Ceramic Plant" means a manufacturing plant producing ceramic items.

(f) "Foundry" means a facility engaged in the melting or casting of beryllium metal or alloy.

(g) "Beryllium-Containing Waste" means material contaminated with beryllium and/or beryllium compounds used or generated during any process or operation performed by a source subject to this section.

(h) "Incinerator" means any furnace used in the process of burning waste for the primary purpose of reducing the volume of the waste by removing combustible matter.

(i) "Propellant" means a fuel and oxidizer physically or chemically combined which undergoes combustion to provide rocket propulsion.

(j) "Beryllium Alloy" means any metal to which beryllium has been added in order to increase its beryllium content and which contains more than 0.1 percent beryllium by weight.

(k) "Propellant Plant" means any facility engaged in the mixing, casting or machining of propellants.

(3) Emission standard

(a) Emissions to the atmosphere from stationary sources subject to the provisions of this section shall not exceed ten (10) grams of beryllium over a twenty-four (24) hour period, except as provided in Paragraph (b) of this subsection.

(b) Rather than meet the requirements of Paragraph (a) of this subsection, an owner or operator may request approval from the Department to meet an ambient concentration limit on beryllium in the vicinity of the stationary source of 0.01 μg/cubic meter averaged over a thirty (30) day period.

1. Approval of such requests may be granted by the Department provided that:

a. At least three (3) years of data is available which in the judgment of the Department demonstrates that the future ambient concentrations of beryllium in the vicinity of the stationary source will not exceed 0.01 μg/cubic meter, averaged over a thirty (30) day period. Such three (3) year period shall be the three (3) years ending thirty (30) days before the effective date of this regulation.

b. The owner or operator requests such approval in writing within thirty (30) days after the effective date of this regulation.

c. The owner or operator submits a report to the Department within forty-five (45) days after the effective date of this regulation which includes the following information:

  (i) Description of sampling method including the method and frequency of calibration,

  (ii) Method of sampling analysis,

  (iii) Averaging technique for determining thirty (30) day average concentrations,

  (iv) Number, identity, and location (address, coordinates, or distance and heading from plant) of sampling sites,

  (v) Ground elevations and height above ground of sampling inlets,

  (vi) Plant and sampling area plots showing emission points and sampling sites. Topographic features significantly affecting dispersion including plant building heights and location shall be included,

  (vii) Information necessary for estimating dispersion including stack height, inside diameter, gas temperature, exit velocity or flow rate and beryllium concentrations,

  (viii) A description of data and procedures (methods or models) used to design the air sampling network (i.e. number and location of sampling sites),

  (ix) Air sampling data indicating beryllium concentrations in the vicinity of the stationary source for the three (3) year period specified in Subsection (3)(b)1. of this section. This data shall be presented chronologically and include the beryllium concentration and location of each individual sample taken by the network and the corresponding thirty (30) day average beryllium concentrations.

2. Within sixty (60) days after receiving such report, the Department shall notify the owner or operator in writing whether approval is granted or denied. Prior to denying approval to comply with the provisions of Paragraph (b)1. of this subsection, the Department will consult with representatives of the air contaminant source for which the demonstration report was submitted.

(c) The burning of beryllium and/or beryllium-containing waste, except propellants, is prohibited except in incinerators, emission from which must comply with the standard specified in this section.

(4) Stack sampling

(a) Each owner or operator required to comply with Subsection (3)(a) of this section shall test emissions from his source as set forth in 40 CRF 61 as follows:

1. Within ninety (90) days of the effective date of this regulation in the case of an existing source or a new source which has initial startup date preceding the effective date of this regulation; or

2. Within ninety (90) days of startup in the case of a new source which does not have an initial startup date preceding the effective date of this regulation.

(b) The Department shall be notified at least thirty (30) days prior to an amission test so that it may observe the tests.

(c) Samples shall be taken over such period or periods as are necessary to accurately determine the maximum emissions which will occur in any twenty-four (24) hour period. Where emissions depend upon the relative frequency of operation of different types of processes, operating hours, operating capacities, or other factors, the calculation of maximum twenty-four (24) hour period emissions be based on that combination of factors which are likely to occur during the subject period and which result in the maximum emissions. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until a new emission level has been estimated by calculation and the results reported to the Department.

(d) All samples shall be analyzed and beryllium emissions shall be determined within thirty (30) days after the source test. All determinations shall be reported to the Department.

(e) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available for inspection by the Department for a minimum of two (2) years.

(5) Air Sampling

(a) Stationary sources subject to Subsection (3)(b) of this section shall locate air sampling sites in accordance with a plan approved by the Department. Such sites shall be located in such a manner calculated to detect maximum concentrations of beryllium in the ambient air.

(b) All monitoring sites shall be operated continuously except for a reasonable time allowance for instrument maintenance and calibration, for changing filters, or for replacement of equipment needing major repair.

(c) Filters shall be analyzed and concentration calculated within thirty (30) days after filters are collected. Records of concentrations at all sampling sites and other data needed to determine such concentrations shall be retained at the source and made available for inspection by the Department for a minimum of two (2) years.

(d) Concentrations measured at all sampling sites shall be reported to the Department every thirty (30) days.

(e) The Department may at any time require changes in or expansion of the sampling network.

Section 6. Emission Standard for Mercury

(1) Applicability

The provisions of this section are applicable to those stationary sources which process mercury ore to recover mercury, or use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide.

(2) Definitions

Terms used in this section not defined herein shall have the meaning given to them in 401 KAR 3:010 and in Section 2 of this regulation:

(a) "Mercury" means the element mercury, excluding any associated elements, and includes mercury in particulates, vapors, aerosols, and compounds.

(b) "Mercury ore" means a mineral mined specifically for its mercury content.

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(c) "Mercury Ore Processing Facility" means a facility processing mercury ore to obtain mercury.

(d) "Condenser Stack Gases" mean the gaseous effluent evolved from the stack of processes utilizing heat to extract mercury metal from mercury ore.

(e) "Mercury Chlor-alkali Cell" means a device which is basically composed of an electrolyzer section and a denuder (decomposer) section and utilized mercury to produce chlorine gas, hydrogen gas and alkali metal hydroxide.

(f) "Mercury Chlor-alkali Electrolyzer" means an electrolytic device which is part of a mercury chlor-alkali call and utilizes a flowing mercury cathode to produce chlorine gas and alkali metal amalgam.

(g) "Denuder" means a container which is part of a mercury chlor-alkali cell and in which water and alkali metal amalgam are converted to alkali metal hydroxide, mercury, and hydrogen gas in a short-circuited, electrolytic reaction.

(h) "Hydrogen Gas Stream" means a hydrogen stream formed in the chlor-alkali cell denuder.

(i) "End Box" means a container(s) located on one or both ends of a mercury chlor-alkali electrolyzer which serves as a connection between the electrolyzer and denuder for rich and stripped amalgam.

(j) "End Box Ventilation System" means a ventilation system which collects mercury emissions from the end-boxes, the mercury pump sumps, and their water collection systems.

(k) "Cell room" means a structure(s) housing one or more mercury electrolytic chlor-alkali cells.

(3) Emission Standard

Emissions to the atmosphere from stationary sources subject to the provisions of this sections shall not exceed 3,2000 grams of mercury per twenty-four (24) hour period.

(4) Stack Sampling

(a) Mercury ore processing facility.

1. Each owner or operator processing mercury ore shall test emissions from his source as set forth in 40 CFR 61 as follows:

a. Within ninety (90) days of the effective date of this regulation in the case of existing source or a new source which has an initial startup date preceding the effective date of this regulation; or

b. Within ninety (90) days of startup in the case of a new source which did not have an initial startup date preceding the effective date of this regulation.

2. The Department shall be notified at least thirty (30) days prior to an emission test, so that it may observe the test.

3. Samples shall be taken over such period or periods as are necessary to accurately determine the maximum emissions which will occur in a twenty-four (24) hour period. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until the new emission level has been estimated by calculation and the results reported to the Department.

4. All samples shall be analyzed, and mercury emissions shall be determined within thirty (30) days after the source test. Each determination will be reported to the Department.

5. Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available for inspection by the Department for a minimum of two (2) years.

(b) Mercury chlor-alkali plant - hydrogen and end-box ventilation gas streams.

1. Each owner or operator employing mercury chlor-alkali cell(s) shall test emissions from his source as follows:

a. Within ninety (90) days of the effective date of this regulation in the case of an existing source or a new source which has an initial startup date preceding the effective date of this regulation; or

b. Within ninety (90) days of startup on the case of a new source which did not have an initial startup date preceding the effective date of this regulation.

2. The Department shall be notified at least thirty (30) days prior to an emission test, so that it may at its option observe the test.

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3. Samples shall be taken over such period or periods as are necessary to accurately determine the maximum emissions which will occur in a twenty-four (24) hour period. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until the new emission has been estimated by calculation and the results reported to the Department.

4. All samples shall be analyzed and mercury emissions shall be determined within thirty (30) days after the source test. All the determinations will be reported to the Department.

5. Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available for inspection by the Department for a minimum of two (2) years.

(c) Mercury chlor-alkali plants - cell room ventilation system.

1. Stationary sources using mercury chlor-alkali cells may test cell room emissions in accordance with Paragraph (c)2 of this subsection or demonstrate compliance with Paragraph (c)4 of this subsection and assume ventilation emissions of 1,300 g/day of mercury.

2. Each owner or operator shall pass all cell room air in forced gas streams through stacks suitable for testing as set forth in 40 CFR 61 as follows:

   a. Within ninety (90) days of the effective date of this regulation in the case of an existing source or a new source which has an initial startup date preceding the effective date of this regulation; or

   b. Within ninety (90) days of startup in the case of a new source which did not have an initial startup date preceding the effective date of this regulation.

3. The Department shall be notified at least thirty (30) days prior to an emission test, so that it may at its option observe the test.

4. An owner or operator may carry out approved design, maintenance and housekeeping practices.

Section 7. Emission Standard for Beryllium Rocket Motor Firing

(1) Applicability

The provisions of this section are applicable to rocket motor test sites.

(2) Definitions

Terms used in this section not defined herein shall have the meaning given to them in 401 KAR 3:010 and in Section 2 of this regulation.

(a) "Rocket motor test site" means any building, structure, facility, or installation where the static test firing of a beryllium rocket motor and/or the disposal of beryllium propellant is conducted.

(b) "Beryllium propellant" means any propellant incorporating beryllium.

(3) Emission Standard

(a) Emissions to the atmosphere from rocket-motor test sites shall not cause time-weighted atmospheric concentrations of beryllium to exceed seventy-five (75) microgram minutes per cubic meter of air within the limits of ten (10) to sixty (60) minutes, accumulated during any two (2) consecutive weeks, in any area in which an effect adverse to public health could occur.

(b) If combustion products from the firing of beryllium propellant are collected in a closed tank, emissions from such tank shall not exceed two (2) grams per hour and a maximum to ten (10) grams per day.

(4) Emission testing - rocket firing or propellant disposal.

(a) Ambient air concentrations shall be measured during and after firing of a rocket motor or propellant disposal and in such a manner that the effect of these emissions can be compared with the standard. Such sampling techniques shall be approved by the Department.

(b) All samples shall be analyzed and results shall be calculated within thirty (30) days after samples are taken and before any subsequent rocket motor firing or propellant disposal at the given site. All results shall be reported to the Department by a registered letter dispatched before the close of the next business day following determination of such results.

(c) Records of air sampling test results and other data needed to determine integrated intermittent concentrations shall be retained at the source and made available for inspection by the Department for a minimum of two (2) years.

(d) The Department shall be notified at least thirty (30) days prior to an air sampling test, so that it may at its option observe the test.

(5) Stack sampling

(a) Sources subject to Subsection (3)(b) of this section shall be continuously sampled, during release of combustion products from the tank, in such a manner that compliance with the standards can be determined.

(b) All samples shall be analyzed and beryllium emissions shall be determined within thirty (30) days after samples are taken and before any subsequent rocket motor firing or propellant disposal at the given site. All determinations shall be reported to the Department by a registered letter dispatched before the close of the next business day following such determinations.

(c) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available for inspection by the Department for a minimum of two (2) years.

(d) The Department shall be notified at least thirty (30) days prior to an emission test, so that it may at its option observe the test.

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CHAPTER 59
NEW SOURCE STANDARDS

401 KAR 59:005. General provisions.

Section 1. Applicability. The provisions of this chapter shall apply to the owner or operator of any new source for which a standard of performance has been promulgated under this chapter.

Section 2. Performance Tests.

(1) Within sixty (60) days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility and at such other times as may be required by the Department the owner or operator of any affected facility except those affected facilities specified below shall conduct performance test(s) according to 401 KAR 50:045 and furnish the Department a written report of the results of such performance test(s).

(a) Process operation with a process weight rate of less than 100 tons per hour;

(b) Indirect heat exchanger of 250 million BTU heat input per hour or less;

(c) Incinerator with a charging rate of forty-five (45) metric tons per day (fifty (50) tons/day) or less;

(d) Affected facilities specified in 401 KAR 59:046, 401 KAR 59:050, 401 KAR 59:090, 401 KAR 59:095, 401 KAR 59:101, 401 KAR 59:175, 401 KAR 59:180, 401 KAR 59:185, 401 KAR 59:190, 401 KAR 59:195, 401 KAR 59:200, 401 KAR 59:210, 401 KAR 59:215 and 401 KAR 59:220.

(2) The Department may require the owner or operator of any affected facility including those specified in subsection (1) of this section to conduct performance test(s) according to 401 KAR 50:045 and furnish a written report of the results of such performance test(s).

Section 3. Notification and Recordkeeping. Nothing in this section shall relieve the owner or operator from the responsibility of obtaining the appropriate permits required by 401 KAR 50:035.

(1) Any owner or operator subject to the provisions of this regulation shall furnish the Department written notification as follows:

(a) A notification of the date of construction, reconstruction, or modification of an affected facility is commenced, postmarked no later than thirty (30) days after such date;

(b) A notification of the anticipated date of initial startup of an affected facility postmarked not more than sixty (60) days nor less than thirty (30) days prior to such date;

(c) A notification of the actual date of initial startup of an affected facility postmarked within fifteen (15) days after such date;

(d) A notification of any physical or operational change to an affected facility which may increase the emission rate of any air pollutant to which a standard applies. This notice shall be postmarked sixty (60) days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Department may request additional relevant information subsequent to this notice;

(e) A notification of the date upon which demonstration of the continuous monitoring system performance commences in accordance with Section 4(3). Notification shall be postmarked not less than thirty (30) days prior to such date.

(2) Any owner or operator subject to the provisions of this chapter shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

(3) Each owner or operator required to install a continuous monitoring system shall submit for every calendar quarter a written report of excess emissions (as defined in applicable sections) to the Department. Both a printed report and computer tape or cards shall be furnished in the format specified by the Department. All quarterly reports shall be postmarked by the thirtieth (30th) day following the end of each calendar quarter and shall include the following information:

(a) The magnitude of excess emissions computed in accordance with Section 4(8), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions;

(b) All hourly averages shall be reported for sulfur dioxide and nitrogen oxides monitors. The hourly averages shall be made available on computer tape or cards;

(c) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted;

(d) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments;

(e) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(4) Any owner or operator subject to the provisions of this chapter shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurement; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this chapter recorded in a permanent form suitable for inspection. The file shall be retained for at least two (2) years following the date of such measurements, maintenance, reports, and records.

Section 4. Monitoring Requirements.

(1) All continuous monitoring systems required under the regulations of this chapter shall be subject to the provisions of this section upon promulgation of performance specifications for continuous monitoring system under Appendix B of 40 CFR 60, filed by reference in 401 KAR 50:015, unless:

(a) The continuous monitoring system is subject to the provisions of subsection (3)(b) and (c) section; or

(b) Otherwise specified in an applicable regulation or by the Department.

(2) All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests under Section 2. Verification of operational status shall, as a minimum, consist of the following:

(a) For continuous monitoring systems referenced in subsection (3)(a) of this section, completion of the conditioning period specified by applicable requirements in Appendix B to 40 CFR 60;

(b) For continuous monitoring systems referenced in subsection (3)(b) of this section, completion of seven (7) days of operation;

(c) For monitoring devices referenced in applicable regulations, completion of the manufacturer's written requirements or recommendations for checking the operation or calibration of the device.

(3) During any performance tests required under Section 2 or within thirty (30) days thereafter and at such other times as may be required by the Department, the owner or operator of any affected facility shall conduct continuous monitoring system performance evaluations and furnish the Department within sixty (60) days thereof

copy of a written report of the results of such tests. These continuous monitoring system performance evaluations shall be conducted in accordance with the following specifications and procedures;

(a) Continuous monitoring systems listed within this paragraph except as provided in paragraph (b) of this subsection shall be evaluated in accordance with the requirements and procedures contained in the applicable performance specification of Appendix B to 40 CFR 60 as follows:

1. Continuous monitoring systems for measuring opacity of emissions shall comply with Performance Specification 1;
2. Continuous monitoring systems for measuring nitrogen oxides emissions shall comply with Performance Specification 2;
3. Continuous monitoring systems for measuring sulfur dioxide emissions shall comply with Performance Specification 2;
4. Continuous monitoring systems for measuring the oxygen content or carbon dioxide content of effluent gases shall comply with Performance Specification 3.

(b) An owner or operator who, prior to September 11, 1974, entered into a binding contractual obligation to purchase specific continuous monitoring system components or who, prior to October 6, 1975, installed continuous monitoring equipment, shall comply with the following requirements:

1. Continuous monitoring systems for measuring opacity of emissions shall be capable of measuring emission levels within ± twenty (20) percent with a confidence level of ninety-five (95) percent. The Calibration Error Test and associated calculation procedures set forth in Performance Specification 1 of Appendix B to 40 CFR 60 shall be used for demonstrating compliance with this specification;
2. Continuous monitoring systems for measurement of nitrogen oxides or sulfur dioxide shall be capable of measuring emission levels within ± twenty (20) percent with a confidence level of ninety-five (95) percent. The Calibration Error Test, the Field Test for Accuracy (Relative), and associated operating and calculation procedures set forth in Appendix B to 40 CFR 60 shall be used for demonstrating compliance with this specification;
3. Owners or operators of all continuous monitoring systems installed on an affected facility prior to October 6, 1975, may be required to conduct tests under subparagraphs 1 and/or 2 of this paragraph if so requested by the Department.

(c) All continuous monitoring systems referenced by paragraph (b) of this subsection shall be upgraded or replaced (if necessary) with new continuous monitoring systems, and the new or improved systems shall be demonstrated to comply with applicable performance specifications under paragraph (a) of this subsection on or before September 11, 1979.

(4) Owners or operators of all continuous monitoring systems installed in accordance with the provisions of this regulation shall check the zero and span drift at least once daily in accordance with the method prescribed by the manufacturer of such systems unless the manufacturer recommends adjustments at shorter intervals, in which case such recommendations shall be followed. The zero and span shall, as a minimum, be

adjusted whenever the twenty-four (24) hour zero drift or twenty-four (24) hour calibration drift limits of the applicable performance specifications in Appendix B to 40 CFR 60 are exceeded. For continuous monitoring systems measuring opacity of emissions, the optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero or span drift adjustments except that, for systems using automatic zero adjustments, the optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds four (4) percent opacity. Unless otherwise approved by the Department, the following procedures, as applicable, shall be followed:

(a) For extractive continuous monitoring systems measuring gases, minimum procedures shall include introducing applicable zero and span gas mixtures into the measurement system as near the probe as is practical. Span and zero gases certified by their manufacturer to be traceable to National Bureau of Standards reference gases shall be used whenever these reference gases are available. The span and zero gas mixtures shall be the same composition as specified in Appendix B to 40 CFR 60. Every six (6) months from date of manufacture, span and zero gases shall be reanalyzed by conducting triplicate analyses with Reference Method 6 for sulfur dioxide, Reference Method 7 for nitrogen oxides, and Reference Method 3 for oxygen and carbon dioxide;

(b) For non-extractive continuous monitoring systems measuring gases, minimum procedures shall include upscale check(s) using a certified calibration gas cell or test cell which is functionally equivalent to a known gas concentration. The zero check may be performed by computing the zero value from upscale measurements or by mechanically producing a zero condition;

(c) For continuous monitoring systems measuring opacity of emissions, minimum procedures shall include a method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photodetector assembly.

(5) Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under subsection (4) of this section, all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

(a) All continuous monitoring systems referenced by subsection (3)(a) and (b) of this section for measuring opacity of emissions shall complete a minimum of one cycle of sampling and analyzing for each successive ten (10) second period and one cycle of data recording for each successive six (6) minute period;

(b) All continuous monitoring systems referenced by subsection (3)(a) of this section for measuring oxides of nitrogen sulfur dioxide, carbon dioxide, or oxygen shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive fifteen (15) minute period;

(c) All continuous monitoring systems referenced by subsection (3)(b) of this section, except opacity, shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive one (1) hour period.

(6) All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. Additional procedures for location of continuous monitoring systems contained in the applicable Performance Specifications of Appendix B to 40 CFR 60 shall be used.

(7) When the effluents from a single affected facility or two or more affected facilities subject to the same emission standard are combined before being released to the atmosphere, the owner or operator may install applicable continuous monitoring systems on each effluent or on the combined effluent. When the affected facilities are not subject to the same emission standards, separate continuous monitoring systems shall be installed on each effluent. When the effluent from one affected facility is released to the atmosphere through more than one point, the owner or operator shall install applicable continuous monitoring systems on each separate effluent unless the installation of fewer systems is approved by the Department.

(8) Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to six (6) minute averages and for systems other than opacity to one (1) hour averages. Six (6) minute opacity averages shall be calculated from twenty-four (24) or more data points equally spaced over each six (6) minute period. For systems other than opacity, one (1) hour averages shall be computed from four (4) or more data points equally spaced over each one (1) hour period. Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this subsection. An arithmetic or integrated average of all data may be used. The data output of all continuous monitoring systems may be recorded in reduced or nonreduced form (e.g. ppm pollutant and percent oxygen or lb/million BTU of pollutant). All excess emissions shall be converted into units of the standard using the applicable conversion procedures specified in regulations within this chapter. After conversion into units of the standard the data may be rounded to the same number of significant digits used in the regulation to specify the applicable standard (e.g. rounded to the nearest one percent opacity).

(9) Upon written application by an owner or operator, the Department may allow alternative monitoring procedures or requirements which have been approved by the United States Environmental Protection Agency including, but not limited to the following:

(a) Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this chapter would not provide accurate measurements due to liquid water or other interferences caused by substances with the effluent gases;

(b) Alternative monitoring requirements when the affected facility is infrequently operated;

(c) Alternative monitoring requirements to accommodate continuous monitoring systems that require additional measurements to correct stack moisture conditions;

(d) Alternative locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements;

(e) Alternative methods of converting pollutant concentration measurements to units of the standards;

(f) Alternative procedures for performing daily checks of zero and span drift that do not involve use of span gases or test cells;

(g) Alternatives to the A.S.T.M. test methods, filed by reference in 401 KAR 50:015, or sampling procedures specified by any regulation;

(h) Alternative continuous monitoring systems that do not meet the design or performance requirements in Performance Specification 1, Appendix B to 40 CFR 60, but adequately demonstrate a definite and consistent relationship between its measurements and the measurements of opacity by a system complying with the requirements in Performance Specification 1. The Department may require that such demonstration be performed for each affected facility;

(i) Alternative monitoring requirements when the effluent from a single affected facility or the combined effluent from two (2) or more affected facilities are released to the atmosphere through more than one point.

401 KAR 59:010. New process operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates in this chapter, commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Process operation" means any method, form, action, operation, or treatment of manufacturing or processing, and shall include any storage or handling of materials or products, before, during, or after manufacturing or processing.

(2) "Process weight" means the total weight of all materials introducted into any affected facility which may cause any emission of particulate matter, but does not include liquid and gaseous fuels charged, combustion air, or uncombined water.

(3) "Process weight rate" means a rate established as follows:

(a) For continuous or long-run steady state operations, the total process weight for the entire period of continuous operation or for a typical portion thereof, divided by the number of hours of such period or portion thereof;

(b) For cyclical or batch unit operations, or unit processes, the total process weight for a period that covers a complete operation or an integral number of cycles, divided by the hours of actual process operation during such a period;

(c) Where the nature of any process operation or the design of any equipment is such as to permit more than one interpretation of this definition, the interpretation which results in the minimum value for allowable emission shall apply.

(4) "Affected facility" as related to process operations means the last operation preceding the emission of air contaminants which results:

(a) In the separation of the air contaminant from the process materials; or

(b) In the conversion of the process materials into air contaminants, but does not include an air pollution abatement operation.

(5) "Classification date" means July 2, 1975.

Section 3. Standard for Particulate Matter. No person shall cause, suffer, allow, or permit the emission into the open air of particulate matter from any affected facility, or from all air pollution control equipment installed on any affected facility which:

(1) Is equal to or greater than twenty (20) percent opacity; or

(2) Is in excess of the quantity specified in Appendix A to this regulation.

Section 4. Test Methods and Procedures. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Section 3 shall be conducted according to the following methods, filed by reference in 401 KAR 50:015:

(1) For sources located in or having significant impact upon areas designated non-attainment for total suspended particulates under 401 KAR 51:010, Kentucky Method 50 for the emission rates of particulate matter and the associated moisture content. In all other areas Reference Method 5 shall be used.

(2) Reference Method 1 for sample and velocity traverses.

(3) Reference Method 2 for velocity and volumetric flow rate.

(4) Reference Method 3 for gas analysis.

(5) Reference Method 9 for visible emissions.

(6) For Kentucky Method 50 or Reference Method 5, Reference Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 0.85 dscm (thirty (30) dscf) except that smaller sampling time or volumes, when necessitated by process variables or other factors, may be approved by the Department.

APPENDIX A TO 401 KAR 59:010
ALLOWABLE RATE OF PARTICULATE EMISSION
BASED ON PROCESS WEIGHT RATE

PROCESS WEIGHT RATE		MAXIMUM ALLOWABLE EMISSION RATE
Lb/Hr.	Ton/Hr.	Lb/Hr.
100 or less	0.05 or less	0.56
200	0.10	0.86
400	0.20	1.32
600	0.30	1.70
800	0.40	2.03
1000	0.50	2.34
1500	0.75	3.00
2000	1.00	3.59
2500	1.25	4.12
3000	1.50	4.62
3500	1.75	5.08
4000	2.00	5.52
5000	2.50	6.34
6000	3.00	7.09
7000	3.50	7.81
8000	4.00	8.48
9000	4.50	9.12
10000	5.00	9.74
12000	6.00	10.90
16000	8.00	13.03
18000	9.00	14.02
20000	10.00	14.97
30000	15.00	19.24
40000	20.00	23.00
50000	25.00	26.41
60000	30.00	29.57
70000	35.00	30.57
80000	40.00	31.23
90000	45.00	31.83
100000	50.00	32.37
120000	60.00	33.33
140000	70.00	34.16
160000	80.00	34.90
200000	100.00	36.17
1000000	500.00	46.79
2000000	1000.00	52.28
6000000	3000.00	62.32

Interpolation of the data for process weight rates up to 60,000 lb/hr. shall be accomplished by use of the equation $E = 3.59 P^{0.62}$, and interpolation and extrapolation of the data for process weight rates in excess of 60,000 lb/hr. shall be accomplished by the use of the equation $E = 17.31 P^{0.16}$, where E = rate of emission in lb/hr and P = process weight rate in tons/hr.

401 KAR 59:015. New indirect heat exchangers.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced on or after the applicable classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010 and 401 KAR 50:025.

(1) "Affected facility" means an indirect heat exchanger having a heat input capacity of more than one (1) million BTU per hour.

(2) "Indirect heat exchanger" means any piece of equipment, apparatus or contrivance used for the combustion of fuel in which the energy produced is transferred to its point of usage through a medium that does not come in contact with or add to the products of combustion.

(3) "Classification date" means:

(a) August 17, 1971 for affected facilities with a capacity of more than 250 million BTU per hour heat input with respect to particulate emissions, sulfur dioxide emissions and (if fuels other than lignite are burned) nitrogen oxide emissions;

(b) April 9, 1972 for affected facilities with a capacity of 250 million BTU per hour heat input or less with respect to particulate emissions and sulfur dioxide emissions;

(c) December 22, 1976 for affected facilities with a capacity of more than 250 million BTU per hour heat input with respect to nitrogen oxides if lignite is the fuel burned.

Section 3. Method For Determining Allowable Emission Rates.

(1) Except as provided in subsection (3) of this section, the total rated heat input capacity of all affected facilities within a source, including those for which an application to construct, modify or reconstruct has been submitted to the department, shall be used as specified in Sections 4 and 5 to determine the allowable emission in terms of pounds of effluent per million BTU input.

(2) At such time as any affected facility is assigned an allowable emission rate by the department, at no time thereafter shall that rate be changed due to inclusion or shutdown of any affected facility at the source.

(3)(a) A source may petition the department to establish an allowable emission rate which may be apportioned without regard to individual heat input provided that the conditions specified in paragraphs (b), (c), (d), and (e) of this subsection are met. Such allowable emission rate shall be determined according to the following equation:

$$F = (AB + DE)/C$$

Where:

A = the allowable emission rate (in pounds per million BTU input) as determined according to subsection (1) of this section;

B = the total rated heat input (in millions of BTU per hour) of all affected facilities commenced on or after the applicable classification date within a source, including those for which an application to construct, modify, or reconstruct has been submitted to the department;

C = the total rated heat input (in millions of BTU per hour) of all affected facilities within a source, including those for which an application to construct, modify, or reconstruct has been submitted to the department;

D = the allowable emission rate (in pounds per million BTU input) as determined according to 401 KAR 61:005, Section 3(1);

E = the total rated heat input (in millions of BTU per hour) of all affected facilities commenced before the applicable classification date;

F = the alternate allowable emission rate (in pounds per actual million BTU input).

(b) At no time shall the owner or operator of the source allow the total emissions (in pounds per hour) from all affected facilities within the source divided by the total actual heat input (in millions of BTU per hour) of all affected facilities within the source to exceed the alternate allowable emission rate as determined by paragraph (a) of this subsection.

(c) At no time shall the owner or operator of any source subject to federal new source performance standard allow the emissions from any affected facility commenced on or after the applicable classification date to exceed the allowable emission rate determined by use of that affected facility's rated heat input (instead of the heat input as determined by subsection (1) of this section) as specified in Section 4 and Section 5.

(d) The owner or operator of the source must demonstrate compliance with this subsection by conducting a performance test according to 401 KAR 50:045 on each affected facility under such conditions as may be specified by the department.

(e) Upon petition, the department will establish an alternate emission rate in accordance with this subsection if the owner or operator demonstrates to the department's satisfaction that the source will maintain compliance with this subsection on a continual basis.

Section 4. Standard for Particulate Matter. Except as provided in Section 3(3), no owner or operator of an affected facility subject to the provisions of this regulation shall cause to be discharged into the atmosphere from that affected facility, particulate matter in excess of that specified below:

(1) For sources having a total heat input capacity, as determined by Section 3(1), which is:

(a) Ten (10) million BTU per hour or less, the standard is 0.56 pounds per million BTU actual heat input;

(b) 250 million BTU per hour or more, the standard is 0.10 pounds per million BTU actual heat input;

(c) For heat input values between those specified in paragraphs (a) and (b) of this subsection, the standard in pounds per million BTU actual heat input, is equal to: 0.9634 times that quantity obtained by raising the total heat input capacity (in millions of BTU per hour) to the -0.2356 power;

(2) Emissions which exhibit greater than twenty (20) percent opacity except:

(a) That, for indirect heat exchangers with heat input capacity of 250 million BTU per hour or more, a maximum of twenty-seven (27) percent opacity shall be permissible for not more than one six-minute period in any sixty (60) consecutive minutes.

(b) That, for indirect heat exchangers with heat input capacity of less than 250 million BTU per hour, a maximum of forty (40) percent opacity shall be permissible for not more than six (6) consecutive minutes in any sixty (60) consecutive minutes during cleaning the fire box or blowing soot.

(c) For emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.

Section 5. Standard for Sulfur Dioxide. Except as provided in Section 3(3), no owner or operator of an affected facility subject to the provisions of this regulation shall cause to be discharged into the atmosphere from that affected facility, any gases which contain sulfur dioxide in excess of that specified below:

(1)

F or sources which have a total heat input capacity, as determined by Section 3(1), which is:

(a) Ten (10) million BTU per hour or less, the standard is three (3.0) pounds per million BTU actual heat input for combustion of liquid and gaseous fuels and five (5.0) pounds per million BTU actual heat input for combustion of solid fuels;

(b) 250 million BTU per hour or more, the standard is 0.8 pounds per million BTU actual heat input for combustion of liquid and gaseous fuels and 1.2 pounds per million BTU actual heat input for combustion of solid fuels;

(c) For heat input values between those specified in paragraphs (a) and (b) of this subsection, the standard in pounds per million BTU actual heat input, is equal to:

1. for combustion of liquid and gaseous fuels, 7.7223 times that quantity obtained by raising the total heat input capacity (in millions of BTU per hour) to the -0.4106 power;

2. for combustion of solid fuels, 13.8781 times that quantity obtained by raising the total heat input capacity (in millions of BTU per hour) to the -0.4434 power.

(2) When different fuels are burned simultaneously in any combination the applicable standard shall be determined by proration using the equation given in Appendix A of this regulation.

(3) Compliance shall be based on the total heat input from all fuels burned, including gaseous fuels.

Section 6. Standard for Nitrogen Oxides.

(1) No owner or operator of an affected facility with a heat input capacity of 250 million BTU per hour or more subject to the provisions of this regulation shall cause to be discharged into the atmosphere any gases which contain nitrogen oxides expressed as nitrogen dioxide in excess of:

(a) 0.20 lb. per million BTU heat input (0.36 g. per million cal) derived from gaseous fuel;

(b) 0.30 lb. per million BTU heat input (0.54 g. per million cal) derived from liquid fuel;

(c) 0.70 lb. per million BTU heat input (1.26 g. per million cal) derived from solid fuel (except lignite);

(d) 0.60 lb. per million BTU heat input (1.08 g. per million cal) derived from lignite or lignite and wood residue except as provided under paragraph (e) of this subsection;

(e) .80 lb. per million BTU derived from lignite which is mined in North Dakota, South Dakota, or Montana and which is burned in a cyclone-fired unit.

(2) Except as provided in subsections (3) and (4) of this section, when different fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the equation given in Appendix B to this regulation.

(3) When a fossil fuel containing at least twenty-five (25) percent by weight, of coal refuse is burned in combination with gaseous, liquid, or other solid fossil fuel or wood residue, the standard for nitrogen oxides does not apply.

(4) Cyclone-fired units which burn fuel containing at least twenty-five (25) percent of lignite that is mined in North Dakota, South Dakota, or Montana remain subject to subsection (1)(e) of this section regardless of the types of fuel combusted in combination with that lignite.

Section 7. Emission and Fuel Monitoring. The provisions of this section shall apply to any affected facility of more than 250 million BTU per hour rated heat input capacity.

(1) Each owner or operator shall install, calibrate, maintain, and operate continuous monitoring systems for measuring the opacity of emissions, sulfur dioxide emissions, nitrogen oxides emissions and either oxygen or carbon dioxide except as provided in subsection (2) of this section.

(2) Certain of the continuous monitoring system requirements under subsection (1) of this section do not apply to owners or operators under the following conditions:

(a) For an indirect heat exchanger that burns only gaseous fuel, continuous monitoring systems for measuring the opacity of emissions are not required;

(b) For an indirect heat exchanger that burns only natural gas, continuous monitoring systems for measuring sulfur dioxide emissions are not required;

(c) Notwithstanding 401 KAR 59:005, Section 4(2), installation of a continuous monitoring system for nitrogen oxides may be delayed until after the initial performance tests under 401 KAR 59:005, Section 2 have been conducted. If the owner or operator demonstrates during the performance test that emissions of nitrogen oxides are less than seventy (70) percent of the applicable standards in Section 6, a continuous monitoring system for measuring nitrogen oxides emissions is not required. If the initial performance test results show that nitrogen oxide emissions are greater than seventy (70) percent of the applicable standard, the owner or operator shall install a continuous monitoring system for nitrogen oxides within one (1) year after the date of the initial performance tests under 401 KAR 59:005, Section 2 and comply with all other applicable monitoring requirements under this chapter;

(d) If an owner or operator does not install any continuous monitoring systems for sulfur oxides and nitrogen oxides, as provided under paragraphs (a) and (c) or paragraphs (b) and (c) of this subsection a continuous monitoring system for measuring either oxygen or carbon dioxide is not required.

(e) For an indirect heat exhanger that does not use a flue gas desulfurization device, a continuous monitoring system for measuring sulfur dioxide emissions is not required if the owner or operator monitors sulfur dioxide emissions by fuel sampling and analysis under subsection (6) of this section.

(3) For performance evaluations under 401 KAR 59:005, Section 4(3) and calibration checks under 401 KAR 59:005, Section 4(4), the following procedures shall be used:

(a) Reference Methods 6 or 7, filed by reference in 401 KAR 50:015, as applicable, shall be used for conducting performance evaluations of sulfur dioxide and nitrogen oxides continuous monitoring systems;

(b) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of Appendix B to 40 CFR 60, filed by reference in 401 KAR 50:015;

(c) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be eighty (80), ninety (90), or 100 percent and for a continuous monitoring system measuring sulfur oxides or nitrogen oxides the span value shall be determined as shown in Appendix C of this regulation;

(d) All span values computed under subsection (3)(c) of this section for burning combinations of fuels shall be rounded to the nearest 500 ppm;

(e) For an indirect heat exchanger that simultaneously burns fossil fuel and nonfossil fuel, the span value of all continuous monitoring systems shall be subject to the department's approval.

(4) A continuous monitoring system for measuring either oxygen or carbon dioxide in the flue gases, shall be installed, calibrated, maintained and operated by the owner or operator.

(5) For any continuous monitoring system installed under subsection (1) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/million BTU):

(a) When a continuous monitoring system for measuring oxygen is selected, the measurement of the pollutant concentration and oxygen concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the department and the U. S. Environmental Protection Agency shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used:

$$E = (20.9CF)/(20.9\text{-}\%\ \text{oxygen})$$

where:

E, C, F and % oxygen are determined under subsection (6) of this section.

(b) When a continuous monitoring system for measuring carbon dioxide is selected, the measurement of a pollutant concentration and carbon dioxide concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used:

$$E = (100\ CFc)/(\%\ \text{carbon dioxide})$$

where:

E, C, Fc and % carbon dioxide are determined under subsection (6) of this section.

(6) The values used in the equations under subsection (5)(a) and (b) of this section are derived as follows:

(a) E = Pollutant emission, g/million cal (lb/million BTU).

(b) C = Pollutant concentration, g/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by .0000415 M g/dscm per ppm (2.59 times ten (10) raised to the minus nine (9) power times M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64.07 for sulfur dioxide and 46.01 for nitrogen oxides.

(c) F, Fc = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of carbon dioxide generated to the calorific value of the fuel combusted (Fc), respectively, as follows (A.S.T.M. designations are filed by reference in 401 KAR 50:015):

1. For anthracite coal as classified according to A.S.T.M. D388-66(72), F = 10,140 dscf/million BTU and Fc = 1980 scf CO2/million BTU.

2. For sub-bituminous and bituminous coal as classified according to A.S.T.M. D388-66(72), F = 9820 dscf/million BTU and Fc = 1810 scf CO2/million BTU.

3. For liquid fossil fuels including crude, residual, and distillate oils, F = 9220 dscf/million BTU and Fc = 1430 scf CO2/million BTU.

4. For gaseous fossil fuels, F = 8740 dscf/million BTU. For natural gas, propane and butane fuels, Fc = 1040 scf CO2/million BTU for natural gas, 1200 scf CO2/million BTU for propane, and 1260 scf CO2/million BTU for butane.

5. For bark, F = 9575 dscf/million BTU and Fc = 1927 scf CO2/million BTU. For wood residue other than bark, F = 9233 dscf/million BTU and Fc = 1842 scf CO2/million BTU.

6. For lignite coal as classified according to A.S.T.M. D388-66, F = 9900 dscf/mm BTU and Fc = 1920 scf CO2/mm BTU.

(d) The owner or operator may use the equation given in Appendix D of this regulation to determine an F factor (dscm/million cal, or dscf/million BTU) on a dry basis (if it is desired to calculate F on a wet basis, consult with the department) or Fc factor (scm CO2/million cal, or scf CO2/million BTU) on either basis in lieu of the F or Fc factors specified in paragraph (c) of this subsection.

1. H, C, S, N, and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired using A.S.T.M. method D3178-73 or D3176-74 (solid fuels) or computed from results using A.S.T.M. methods D1137-53(75), D1945-64(73), or D1946-67(72) (gaseous fuels) as applicable.

2. GCV is the gross calorific value (cal/g, BTU/lb) of the fuel combusted determined by A.S.T.M. test methods D2015-66(72) for solid fuels and D1826-64(70) for gaseous fuels as applicable.

(e) For affected facilities firing combinations of fuels, the F or Fc factors determined by paragraphs (c) and (d) of this subsection shall be prorated in accordance with the applicable formula as given in Appendix E of this regulation.

(7) For the purpose of reports required under 401 KAR 59:005, Section 3(3), periods of excess emissions that shall be reported are defined as follows:

(a) Excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds twenty (20) percent opacity, except that one six-minute average per hour of up to twenty-seven (27) percent opacity need not be reported.

(b) Sulfur dioxide. Excess emissions for affected facilities are defined as: Any three (3) hour period during which the average emissions (arithmetic average of three (3) contiguous one (1) hour periods) of sulfur dioxide as measured by a continuous monitoring system exceed the applicable standard under Section 5.

(c) Nitrogen oxides. Excess emissions for affected facilities using a continuous monitoring system for measuring nitrogen oxides are defined as any three (3) hour period during which the average emissions (arithmetic average of three (3) contiguous one (1) hour periods) exceed the applicable standards under Section 6.

(8) The department may require for any indirect heat exchanger unit of 250 million BTU per hour heat input or less any or all the emission and fuel monitoring required by this section.

Section 8. Test Methods and Procedures.

(1) The reference methods in Appendix A of 40 CFR 60 except as provided in 401 KAR 50:045 shall be used to determine compliance with the standards as prescribed in Sections 4, 5, and 6 as follows:

(a) Reference Method 1 for the selection of sampling site and sample traverses;

(b) Reference Method 3 for gas analysis to be used when applying Reference Methods 5, 6, and 7;

(c) Reference Method 5 for concentration of particulate matter and the associated moisture content;

(d) Reference Method 6 for the concentration of sulfur dioxide; and

(e) Reference Method 7 for the concentration of nitrogen oxides.

(2) For Reference Method 5, Reference Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least sixty (60) minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller sampling times or volumes, when necessitated by process variables or other factors, may be approved by the department. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature no greater than 160° C (320°F).

(3) For Reference Methods 6 and 7, the sampling site shall be the same as that selected for Reference Method 5. The sampling point in the duct shall be at the centroid of the cross section or at a point no closer to the walls than one (1) m (3.28 ft). For Reference Method 6, the sample shall be extracted at a rate proportional to the gas velocity at the sampling point.

(4) For Reference Method 6, the minimum sampling time shall be twenty (20) minutes and the minimum sampling volume shall be 0.02 dscm (0.71 dscf) for each sample. The arithmetic mean of two (2) samples shall constitute one (1) run. Samples shall be taken at approximately thirty (30) minute intervals.

(5) For Reference Method 7, each run shall consist of at least four (4) grab samples taken at approximately fifteen (15) minute intervals. The arithmetic mean of the samples shall constitute the run value.

(6) For each run using the methods specified by Section 8(1)(a),(b) and (c) of this regulation, the emissions expressed in g/million cal (lb/million BTU) shall be determined by the following procedure:

$$E = (20.9\ CF)/(20.9\ -\%oxygen)$$

where:

(a) E = pollutant emission g/million cal (lb/million BTU).

(b) C = pollutant concentration, g/dscm (lb/dscf), determined by Reference Methods 5, 6 or 7.

(c) % oxygen = oxygen content by volume (expressed as percent), dry basis. Percent oxygen shall be determined by using the integrated or grab sampling and analysis procedures of Reference Method 3 as applicable. The sample shall be obtained as follows:

1. For determination of sulfur dioxide and nitrogen oxides emissions, the oxygen sample shall be obtained simultaneously at the same point in the duct as used to obtain the samples for Reference Methods 6 and 7 determinations, respectively. For Reference Method 7, the oxygen sample shall be obtained using the grab sampling and analysis procedures of Reference Method 3.

2. For determination of particulate emissions, the oxygen sample shall be obtained simultaneously by traversing the duct at the same sampling location used for each run of Reference Method 5 under Section 8(2). Reference Method 1 shall be used for selection of the number of traverse points except that no more than twelve (12) sample points are required.

(d) F = a factor as determined in Section 7(6)(c), (d), or (e).

(7) When combination of fossil fuels are fired, the heat input, expressed in cal/hr (BTU/hr), shall be determined during each testing period by multiplying the gross calorific value of each fuel fired by the rate of each fuel burned. Gross calorific value shall be determined in accordance with A.S.T.M. methods D2015-66(72) (solid fuels), D240-76 (liquid fuels), or D1826-64(70) (gaseous fuels) as applicable. The rate of fuels burned during each testing period shall be determined by suitable methods and shall be confirmed by a material balance over the steam generation system.

APPENDIX A TO 401 KAR 59:015
DETERMINATION OF ALLOWABLE SULFUR DIOXIDE EMISSION

Allowable sulfur dioxide emission in pounds per million BTU per hour heat input =

$$\frac{y\ (a) + z\ (b)}{y + z}$$

Where:

y is the percent of total heat input derived from liquid or gaseous fuel,

z is the percent of total heat input derived from solid fuel,

a is the allowable sulfur dioxide emission in pounds per million BTU heat input derived from liquid or gaseous fuel, and

b is the allowable sulfur dioxide emission in pounds per million BTU heat input derived from solid fuel.

APPENDIX B TO 401 KAR 59:015
DETERMINATION OF ALLOWABLE NITROGEN DIOXIDE EMISSION

Allowable nitrogen dioxide emission in pounds per million BTU/hour heat input =

$$\frac{x\ (0.20) + y\ (0.30) + z\ (0.70) + w\ (0.60)}{x + y + z + w}$$

Where:

x is the percent of total heat input derived from gaseous fuel and,

y is the percent of total heat input derived from liquid fuel and,

z is the percent of total heat input derived from solid fuel (except lignite),

w is the percent of total heat input derived from lignite.

APPENDIX C TO 401 KAR 59:015
DETERMINATION OF SPAN VALUE
(in parts per million)

FOSSIL FUEL	SPAN VALUE FOR SULFUR DIOXIDE	SPAN VALUE FOR NITROGEN OXIDES
Gas	(1)	500
Liquid	1,000	500
Solid	1,500	500
Combinations	$1{,}000y+1{,}500z$	$500(x+y)+1{,}000z$

(1)Not applicable

Where:

x = the fraction of total heat input derived from gaseous fossil fuel, and

y = the fraction of total heat input derived from liquid fossil fuel, and

z = the fraction of total heat input derived from solid fossil fuel.

APPENDIX D TO 401 KAR 59:015
DETERMINATION OF F OR Fc FACTOR

$$F = \frac{2\underline{2} \quad 7.\underline{2} \quad (\%H) + 95.\underline{5} \quad (\%C) + 35.\underline{6} \quad (\%S) + 8.\underline{7} \quad (\%N) - 28.\underline{7} \quad (\%))}{GCV} \text{ (metric units}$$

$$F = \frac{10^{6} \, [3.64(\%H) + \underline{1} \quad .53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%0)]}{GCV} \text{ (English units)}$$

$$Fc = \frac{\underline{2.0 \times 10^{-5}} \quad (\%C)}{GCV} \text{ (metric units)}$$

$$Fc = \frac{321 \times 10^{3} \, (\%C)}{GCV} \text{ (English units)}$$

Where:

H, C, S, N, and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent) respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fire, using A.S.T.M. method D3178-73 or D3176-74 (solid fuels) or computed from results using A.S.T.M. methods D1137-53(75), D1945-64(73), or D1946-67(72) (gaseous fuels) as applicable.

GCV is the gross calorific value (cal/g, BTU/lb) of the fuel combusted, determined by A.S.T.M. test methods D2015-66(72) for solid fuels and D1826-64(70) for gaseous fuels as applicable.

APPENDIX E TO 401 KAR 59:015
DETERMINATION OF F OR Fc FACTOR FOR FIRING COMBINATIONS

$$F = xF_1 + yF_2 + zF_3$$

Where:

x, y, z = the fraction of total heat input derived from gaseous, liquid, and solid fuel, respectively.

F_1, F_2, F_3 = the value of F for gaseous liquid, and solid fuels respectively under Section 7(6)(c) and (d).

$$Fc = \sum_{i=1}^{n} X_i \, (Fc)i$$

Where:

X_i = the fraction of total heat input derived from each type fuel (e.g., natural gas, butane, crude bituminous coal, etc.)

(Fc)i= the applicable Fc factor for each fuel type determined in accordance with Section 7(6)(c) and (d).

401 KAR 59:020. New incinerators.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which means each incinerator commenced on or after the applicable classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Incinerator" means any furnace used in the process of burning waste for the purpose of reducing the volume of the waste by removing combustible matter.

(2) "Day" means twenty-four (24) hours.

(3) "Auxiliary fuel" means a substance burned in an incinerator to supply additional heat to attain temperature sufficiently high to dry and ignite waste material and to maintain ignition of the waste material.

(4) "Classification date" means:

(a) August 17, 1971 for incinerators with a charging rate of more than fifty (50) tons/day,

(b) April 9, 1972 for incinerators with a charging rate of fifty (50) tons/day or less.

Section 3. Standards for Particulate Matter.

(1) No owner or operator of any affected facility shall cause, suffer, allow, or permit the emission produced by the incineration of any substance to have greater than twenty (20) percent opacity.

(2) No owner or operator of an affected facility of 500 lb/hr up to and including forty-five (45) metric tons per day charging rate (fifty (50) tons/day) shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.23 g/dscm (0.1 gr/dscf) corrected to twelve (12) percent carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.

(3) On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator of an affected facility of more than forty-five (45) metric tons per day charging rate (fifty (50) tons/day) shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.18 g/dscm (0.08 gr/dscf) corrected to twelve (12) percent carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.

Section 4. Monitoring of Operations. The owner or operator of an affected facility of more than forty-five (45) metric tons per day charging rate (fifty (50) tons per day) shall record the daily charging rates and hours of operation.

Section 5. Nameplate. All affected facilities shall have a nameplate installed in a conspicuous place on the unit giving the manufacturer's name, model number, rated capacity, and the types of waste material for which the unit is designed.

Section 6. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Section 3 as follows:

(a) Reference Method 5 for the concentration of particulate matter and the associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis and calculation of excess air, using the integrated sample technique.

(2) The sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 0.85 dscm (30.0 dscf) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the Department.

(3) If a wet scrubber is used, the gas analysis sample shall reflect flue gas conditions after the scrubber, allowing for carbon dioxide absorption by sampling the gas on the scrubber inlet and outlet sides according to either the procedure under paragraphs (a) through (f) of this subsection or the procedure under Section 7.

(a) The inlet site shall be selected according to Reference Method 1 or as specified by the Department.

(b) The outlet sampling site shall be the same as for the particulate matter measurement.

(c) Randomly select nine (9) sampling points within the cross-section at both the inlet and outlet sampling sites. Use the first set of three (3) for the first run, the second set for the second run, and the third set for the third run.

(d) Simultaneously with each particulate matter run, extract and analyze for carbon dioxide an integrated gas sample traversing the three (3) sample points and sampling at each point for equal increments of time. Conduct the runs at both inlet and outlet sampling sites.

(e) Measure the volumetric flow rate at the inlet during each particulate matter run using the full number of traverse points. For the inlet make two (2) full velocity traverses approximately one (1) hour apart during each run and average the results. The outlet volumetric flow rate may be determined from the particulate matter run.

(f) Calculate the adjusted carbon dioxide percentage using the equation in Appendix A of this regulation.

Section 7. Alternatively, the following procedures may be substituted for the procedures under Section 6(3)(d), (e) and (f).

(1) Simultaneously with each particulate matter run, extract and analyze for carbon dioxide, oxygen, and nitrogen an integrated gas sample traversing the three (3) sample points and sampling for equal increments of time at each point. Conduct the runs at both the inlet and outlet sampling sites.

(2) After completing the analysis of the gas sample, calculate the percentage of excess air for both the inlet and outlet sampling sites.

(3) Calculate the adjusted carbon dioxide percentage using the equation in Appendix B of this regulation.

(4) Particulate matter emissions, expressed in g/dscm, shall be corrected to twelve (12) percent carbon dioxide by using the formula in Appendix C of this regulation.

APPENDIX A TO 401 KAR 59:020
CALCULATION FOR ADJUSTED CARBON DIOXIDE PERCENTAGE FOR INCINERATORS

$$\%CO_2A = \% \ CO_2D \ (Q_i/Q_o)$$

where:

$\%CO_2A$ is the adjusted carbon dioxide percentage which removes the effect of carbon dioxide absorption and dilution air.

$\%CO_2D$ is the percentage of carbon dioxide measured before the scrubber, dry basis.

Q_i is the volumetric flow rate before the scrubber average of two (2) runs, dscf/min, and

Q_o is the volumetric flow rate after the scrubber, dscf/min.

APPENDIX B TO 401 KAR 59:020
CALCULATION FOR ADJUSTED CARBON DIOXIDE PERCENTAGE INCINERATOR, ALTERNATE PROCEDURE

$$\%CO_2A = \%CO_2D \frac{100 + \%\ EA_i}{100 + \%\ EA_o}$$

where:

$\%CO_2A$ is the adjusted outlet carbon dioxide percentage,

$\%CO_2D$ is the percentage of carbon dioxide measured before the scrubber, dry basis,

$\%EA_i$ is the percentage of excess air at the inlet, and

$\%EA_o$ is the percentage of excess air at the outlet.

APPENDIX C TO 401 KAR 59:020
PARTICULATE EMISSIONS CORRECTION CALCULATION FOR INCINERATORS, ALTERNATE PROCEDURE

$$C_{12} = \frac{12C_p}{\%CO_2}$$

where:

C_{12} is the concentration of particulate matter corrected to twelve (12) percent carbon dioxide,

C_p is the concentration of particulate matter and,

$\%CO_2$ is the percentage of measured carbon dioxide or when applicable, the adjusted outlet carbon dioxide percentage as determined by Appendix B to this regulation.

401 KAR 59:025. New portland cement plants.

Section 1. Applicability. The provisions of the regulation shall apply to the following affected facilities in portland cement plants commenced on or after the classification date defined below: kiln, clinker cooler, raw mill system, finish mill system, raw mill dryer, raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Portland cement plant" means any facility manufacturing portland cement by either the wet or dry process.

(2) "Classification date" means August 17, 1971.

Section 3. Standard for Particulate Matter.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any kiln any gases which:

(a) Contain particulate matter in excess of 0.15 kg per metric ton of feed (dry basis) to the kiln (0.30 lb per ton).

(b) Exhibit greater than twenty (20) percent opacity.

(2) On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any clinker cooler any gases which:

(a) Contain particulate matter in excess of 0.050 kg per metric ton of feed (dry basis) to the kiln (0.10 lb. per ton).

(b) Exhibit ten (10) percent opacity, or greater.

(3) On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility other than the kiln and clinker cooler any gases which exhibit ten (10) percent opacity, or greater.

Section 4. Monitoring of Operations. The owner or operator of any portland cement plant subject to the provisions of this regulation shall record the daily production rates and kiln feed rates.

Section 5. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Section 3 as follows:

(a) Reference Method 5 for the concentration of particulate matter and the associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) For determination of particulates, the minimum sampling time and minimum sample volume for each run (except when process variables or other factors justify otherwise to the satisfaction of the Department) shall be as follows:

(a) Sixty (60) minutes and 0.85 dscm (30.0 dscf) for the kiln.

(b) Sixty (60) minutes and 1.15 dscm (40.0 dscf) for the clinker cooler.

(3) Total kiln feed rate (except fuels), expressed in metric tons per hour on a dry basis, shall be determined during each testing period by suitable methods; and shall be confirmed by a material balance over the production system.

(4) For each run, particulate matter emissions, expressed in g/metric ton of kiln feed, shall be determined by dividing the emission rate in g/hr by the kiln feed rate. The emission rate shall be determined by the equation, g/hr = (Qs) (c), where Qs = volumetric flow rate of the total effluent in dscm/hr, and c = particulate concentration in g/dscm.

401 KAR 59:030. New nitric acid plants.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which means each nitric acid production unit commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Classification date" means August 17, 1971.

(2) "Nitric acid production unit" means any facility producing weak nitric acid by either the pressure or atmospheric pressure process.

(3) "Weak acid production unit" means acid which is thirty (30) to seventy (70) percent by weight in strength.

Section 3. Standard for Nitrogen Oxides. On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which:

(1) Contain nitrogen oxides, expressed as nitrogen dioxide, in excess of 1.5 kg per metric ton of acid produced (3.0 lb per ton), the production being expressed as 100 percent nitric acid.

(2) Exhibit ten (10) percent opacity, or greater.

Section 4. Emission Monitoring.

(1) A continuous monitoring system for the measurement of nitrogen oxides shall be installed, calibrated, maintained and operated by the owner or operator. The pollutant gas used to prepare calibration gas mixtures under paragraph 2.1, Performance Specification 2 of Appendix

B of 40 CFR 60, filed by reference in 401 KAR 50:015, and for calibration checks under 401 KAR 59:005, Section 4(4) shall be nitrogen dioxide. The span shall be set at 500 ppm of nitrogen dioxide. Reference Method 7 of Appendix A of 40 CFR 60 shall be used for conducting monitoring system performance evaluations under 401 KAR 59:005, Section 4(3).

(2) The owner or operator shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton). The conversion factor shall be established by measuring emissions with the continuous monitoring system concurrently with measuring emissions with the applicable reference method tests. Using only that portion of the continuous monitoring emission data that represents emission measurements concurrent with the reference method test periods, the conversion factor shall be determined by dividing the reference method test data averages by the monitoring data averages to obtain a ratio expressed in units of the applicable standard to units of the monitoring data, i.e., kg/ metric ton per ppm (lb/ton per ppm). The conversion factor shall be re-established during any performance test under 401 KAR 59:005 or any continuous monitoring system performance evaluation under 401 KAR 59:005, Section 4(3).

(3) The owner or operator shall record the daily production rate and hours of operation.

(4) For the purpose of reports required under 401 KAR 59:005, Section 3, periods of excess emissions that shall be reported are defined as any three-hour period during which the average nitrogen oxides emissions (arithmetic average of three contiguous one-hour periods) as measured by a continuous monitoring system exceed the standard under Section 3.

Section 5. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Section 3 as follows:

(a) Reference Method 7 for the concentration of NO_x;
(b) Reference Method 1 for sample and velocity traverses;
(c) Reference Method 2 for velocity and volumetric flow rate; and
(d) Reference Method 3 for gas analysis.

(2) The sampling point shall be the center of cross-sectional area of the stack or duct or at a point no closer to the walls than one (1) m (3.28 ft). Each run shall consist of at least four (4) grab samples taken at approximately fifteen (15) minute intervals. The arithmetic mean of the samples shall constitute the run value. A velocity traverse shall be performed once per run.

(3) Acid production rate, expressed in metric tons per hour of 100 percent nitric acid, shall be determined during each testing period by suitable methods and shall be confirmed by a material balance over the production system.

(4) For each run, nitrogen oxides, expressed in g/metric ton of 100 percent nitric acid, shall be determined by dividing the emission rate in g/hr by the acid production rate. The emission rate shall be determined by the equation:

$$g/hr = (Qs)\ (c)$$

where Qs = volumetric flow rate of the effluent in dscm/hr,

and c = nitrogen oxides (NOx) concentration in g/dscm.

401 KAR 59:035. New sulfuric acid plants.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which is each sulfuric acid production unit commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Sulfuric acid production unit" means any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides and mercaptans, or acid sludge but does not include facilities where conversion to sulfuric acid is utilized primarily as a means of preventing emissions to the atmosphere of sulfur dioxide or other sulfur compounds.

(2) "Acid mist" means sulfuric acid mist, as measured by Method 8 of Appendix A of 40 CRF 60, filed by reference in 401 KAR 50:015, or an equivalent or alternative method.

(3) "Classification date" means August 17, 1971.

Section 3. Standard for Sulfur Dioxide. On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain sulfur dioxide in excess of two (2) kg per metric ton of acid produced (four (4) lb. per ton), the production being expressed as 100 percent sulfuric acid.

Section 4. Standard for Acid Mist. On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator of an affected facility shall allow to be discharged into the atmosphere from any affected facility any gases which:

(1) Contain acid mist in excess of 0.075 kg per metric ton of acid produced (0.15 lb per ton), the production being expressed as 100 percent sulfuric acid.

(2) Exhibit ten (10) percent opacity, or greater.

Section 5. Emission Monitoring.

(1) A continuous monitoring system for the measurement of sulfur dioxide shall be installed, calibrated, maintained, and operated by the owner or operator. The pollutant gas used to prepare calibration gas mixture under paragraph 2.1, Performance Specification 2 of Appendix B to 40 CFR 60 and for calibration checks under 401 KAR 59:005, Section 4(3), shall be sulfur dioxide. Reference Method 8 shall be used for conducting monitoring system performance evaluations under 401 KAR 59:005, Section 4(3) except that only the sulfur dioxide portion of the Reference Method 8 results shall be used. The span shall be set at 1000 ppm of sulfur dioxide.

(2) The owner or operator shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton). The conversion factor shall be determined, as a minimum, three times daily by measuring the concentration of sulfur dioxide entering the converter using suitable methods (e.g., the Reich test) and calculating the appropriate conversion factor for each eight-hour period as follows:

$$CF = k \frac{(1.000-0.015r)}{r-s}$$

where:

CF = conversion factor (kg/metric ton per ppm, lb/ton per ppm).

k = constant derived from material balance. For determining CF in metric units, k = 0.0653. For determining CF in English units, k = 0.1306.

r = percentage of sulfur dioxide by volume entering the gas converter. Appropriate corrections must be made for air injection plants subject to the Department's approval.

s = percentage of sulfur dioxide by volume in the emissions to the atmosphere determined by the continuous monitoring system required under subsection (1) of this section.

(3) The owner or operator shall record all conversion factors and values under subsection (2) of this section from which they were computed (i.e., CF, r, and s).

(4) For the purpose of reports under 401 KAR 59:005, Section 3(3), periods of excess emissions shall be all three-hour periods (or the arithmetic average of three (3) consecutive one(1)-hour periods) during which the integrated average sulfur dioxide emissions exceed the applicable standards under Section 3.

Section 6. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Sections 3 and 4 as follows:

(a) Reference Method 8 for the concentrations of sulfur dioxide and acid mist;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) The moisture content can be considered to be zero. For determination of sulfur dioxide and acid mist the sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 1.15 dscm (40.6 dscf) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the Department.

(3) Acid production rate, expressed in metric tons per hour of 100 percent sulfuric acid, shall be determined during each testing period by suitable methods and shall be confirmed by a material balance over the production system.

(4) Acid mist and sulfur dioxide emissions, expressed in g/metric ton of 100 percent sulfuric acid shall be determined by dividing the emission rate in g/hr by the acid production rate. The emission rate shall be determined by the equation, g/hr = (Qs)(c), where Qs = volumetric flow rate of the effluent in dscm/hr, and c = acid mist and sulfur dioxide concentrations in g/dscm as determined in accordance with subection 6(1)(a) of this section.

401 KAR 59:040. New asphalt concrete plants.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which means each asphalt concrete plant commenced on or after the classification date defined below. For the purpose of this regulation, an asphalt concrete plant is comprised only of any combination of the following: Dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing asphalt concrete; and the loading, transfer and storage systems associated with emission control systems.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Asphalt concrete plant" means any facility, as described in Section 1, used to manufacture asphalt concrete by heating and drying aggregate and mixing with asphalt cements.

(2) "Classification date" means June 11, 1973.

Section 3. Standard for Particulate Matter. On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from any affected facility any gases which:

(1) Contain particulate matter in excess of ninety (90) mg/dscm (0.04 gr/dscf).

(2) Exhibit twenty (20) percent opacity, or greater.

Section 4. Test Methods and Procedures. (1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Section 3 as follows:

(a) Reference Method 5 for the concentration of particulate matter and the associated moisture content.

(b) Reference Method 1 for sample and velocity traverses.

(c) Reference Method 2 for velocity and volumetric flow rate, and

(d) Reference Method 3 for gas analysis.

(2) For determination of the concentration of particulate matter, the sampling time for each run shall be at least sixty (60) minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min), except that shorter sampling times (when necessitated by process variables or other factors) may be approved by the Department.

401 KAR 59:045. New petroleum refineries.

Section 1. Applicability.

(1) The provisions of this regulation are applicable to the following affected facilities in petroleum refineries; fluid catalytic cracking unit catalyst regenerators, fuel gas combustion devices, and all Claus sulfur recovery plants except Claus plants of twenty (20) long tons per day (LTD) or less associated with a small petroleum refinery. The Claus sulfur recovery plant need not be physically located within the boundaries of a petroleum refinery to be an affected facility, provided it processes gases produced within a petroleum refinery.

(2) Any fluid catalytic cracking unit catalyst regenerator or fuel gas combustion device under subsection (1) of this section which commences on or after the classification date defined in Section 2 (14) or any Claus sulfur recovery plant under subsection (1) of this section which commences on or after the classification date defined in Section 2 (14) of this regulation is subject to the requirements of this regulation.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives.

(2) "Petroleum" means the crude oil removed from the earth and the oils derived from tar sands, shale and coal.

(3) "Process gas" means any gas generated by a petroleum refinery process unit, except fuel gas and process upset gas as defined in this section.

(4) "Fuel gas" means any gas which is generated by a petroleum refinery process unit and which is combusted, including any gaseous mixture of natural gas and fuel gas which is combusted.

(5) "Process upset gas" means any gas generated by a petroleum refinery process unit as a result of startup, shutdown, upset or malfunction.

(6) "Refinery process unit" means any segment of the petroleum refinery in which a specific processing operation is conducted.

(7) "Fuel gas combustion device" means any equipment, such as process heaters, boilers and flares used to combust fuel gas, but does not include fluid coking unit and fluid catalytic cracking unit incinerator-waste heat boilers , facilities combusting coke oven gas in a by-product coke manufacturing plant, or facilities in which gases are combusted to produce sulfur or sulfuric acid.

(8) "Coke burn-off" means the coke removed from the surface of the fluid catalytic cracking unit catalyst by combustion in the catalyst regenerator. The rate of coke burn-off is calculated by the formula specified in Appendix A of this regulation.

(9) "Claus sulfur recovery plant" means a process unit which recovers sulfur from hydrogen sulfide by a vapor-phase catalytic reaction of sulfur dioxide and hydrogen sulfide.

(10) "Oxidation control system" means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to sulfur dioxide.

(11) "Reduction control system" means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to hydrogen sulfide.

(12) "Reduced sulfur compounds" means hydrogen sulfide, carbonyl sulfide and carbon disulfide.

(13) "Small petroleum refinery" means a petroleum refinery which has a crude oil processing capacity of 50,000 barrels per stream day or less, and which is owned or controlled by a refinery with a total combined crude oil processing capacity of 137,500 barrels per stream day or less.

(14) "Classification date" means June 11, 1973 for any fluid catalytic cracking unit catalyst regenerator or fuel gas combustion device and October 4, 1976 for any Claus recovery plant.

Section 3. Standard for Particulate Matter. (1) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from any fluid catalytic cracking unit catalyst regenerator:

(a) Particulate matter in excess of 1.0 kg/1000 kg (1.0 lb/1000 lb) of coke burn-off in the catalyst regenerator.

(b) Gases exhibiting greater than thirty (30) percent opacity, except for one six minute average opacity reading in any one hour period.

(2) Where the gases discharged by the fluid catalytic cracking unit catalyst regenerator pass through an incinerator or waste heat boiler in which auxiliary or supplemental liquid or solid fossil fuel is burned, particulate matter in excess of that permitted by subsection (1)(a) of this section may be emitted to the atmosphere, except that the incremental rate of particulate matter emissions shall not exceed 43.0 g/MJ (0.10 lb/million BTU) of heat input attributable to such liquid or solid fossil fuel.

Section 4. Standard for Carbon Monoxide. On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2 is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from the fluid catalytic cracking unit catalyst regenerator any gases which contain carbon monoxide in excess of 0.050 percent by volume.

Section 5. Standard for Sulfur Dioxide. On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall:

(1) Burn in any fuel gas combustion device any fuel gas which contains hydrogen sulfide in excess of 230 mg/dscm (0.10 gr/dscf), except that the gases resulting from the combustion of fuel gas may be treated to control sulfur dioxide emissions provided the owner or operator demonstrates to the satisfaction of the Department that this is as effective in preventing sulfur dioxide emissions to the atmosphere as restricting the hydrogen sulfide concentration in the fuel gas to 230 mg/dscm or less. The combustion in a flare of process upset gas, or fuel gas which is released to the flare as a result of relief valve leakage, is exempt from this paragraph.

(2) Discharge or cause the discharge of any gases into the atmosphere from any Claus sulfur recovery plant containing in excess of:

(a) 0.025 percent by volume of sulfur dioxide at zero percent oxygen on a dry basis if emissions are controlled by an oxidation control system, or a reduction control system followed by incineration; or

(b) 0.030 percent by volume of reduced sulfur compounds and 0.0010 percent by volume of hydrogen sulfide calculated as sulfur dioxide at zero percent oxygen on a dry basis if emissions are controlled by a reduction control system not followed by incineration.

Section 6. Emission Monitoring.

(1) Continuous monitoring systems shall be installed, calibrated, maintained, and operated by the owner or operator as follows:

(a) A continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the fluid catalytic cracking unit catalyst regenerators. The continuous monitoring system shall be spanned at sixty (60), seventy (70) or eighty (80) percent opacity.

(b) An instrument for continuously monitoring and recording the concentration of carbon monoxide in gases discharged into the atmosphere from fluid catalytic cracking unit catalyst regenerators. The span of this continuous monitoring system shall be 1,000 ppm.

(c) A continuous monitoring system for the measurement of sulfur dioxide in the gases discharged into the atmosphere from the combustion of fuel gases (except where a continuous monitoring system for the measurement of hydrogen sulfide is installed under paragraph (d) of this section). The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 of 40 CFR 60, filed by reference in 401 KAR 50:015, Paragraph 2.1, and for calibration checks under 401 KAR 59:005, Section 4(4), shall be sulfur dioxide. The span shall be set at 100 ppm. For conducting monitoring system performance evaluations under 401 KAR 59:005, Section 4(3), Reference Method 6 shall be used.

(d) An instrument for continuously monitoring and recording concentrations of hydrogen sulfide in fuel gases burned in any fuel gas combustion device, if compliance with Section 5(1) is achieved by removing hydrogen sulfide from the fuel gas before it is burned; fuel gas combustion devices having a common source of fuel gas may be monitored at one location, if monitoring at this location accurately represents the concentration of hydrogen sulfide in the fuel gas burned. The span of this continuous monitoring system shall be 300 ppm.

(e) An instrument for continuously monitoring and recording concentrations of sulfur dioxide in the gases discharged into the atmosphere from any Claus sulfur recovery plant if compliance with Section 5(2) is achieved through the use of an oxidation control system or a reduction control system followed by incineration. The span of this continuous monitoring system shall be set at 500 ppm.

(f) An instrument(s) for continuously monitoring and recording the concentration of hydrogen sulfide and reduced sulfur compounds in the gases discharged into the atmosphere from any Claus sulfur recovery plant if compliance with Section 5(2) is achieved through the use of a reduction control system not followed by incineration. The span(s) of this continuous monitoring system(s) shall be set at twenty (20) ppm for monitoring and recording the concentration of hydrogen sulfide and 600 ppm for monitoring and recording the concentration of reduced sulfur compounds.

(2) The average coke burn-off rate (thousands of kilogram/hr) and hours of operation for any fluid catalytic cracking unit catalyst regenerator subject to Sections 3 or 4 shall be recorded daily.

(3) For any fluid catalytic cracking unit catalyst regenerator which is subject to Section 3 and which utilizes an incinerator-waste heat boiler to combust the exhaust gases from the catalyst regenerator, the owner or operator shall record daily the rate of combustion of liquid or solid fossil fuels (liters/hr or kilograms/hr) and the hours of operation during which liquid or solid fossil fuels are combusted in the incinerator-waste heat boiler.

(4) For the purpose of reports under 401 KAR 59:005, Section 3, periods of excess emissions that shall be reported are defined as follows:

(a) Opacity. All one-hour periods which contain two or more six minute periods during which the average opacity as measured by the continuous monitoring system exceeds thirty (30) percent.

(b) Carbon monoxide. All hourly periods during which the average carbon monoxide concentration in the gases discharged into the atmosphere from any fluid catalytic cracking unit catalyst regenerator subject to Section 4 exceeds 0.050 percent by volume.

(c) Sulfur dioxide:

1. Any three hour period during which the average concentration of hydrogen sulfide in any fuel gas combusted in any fuel gas combustion device subject to Section 5(1) exceeds 230 mg/dscm (0.10 gr/dscf), if compliance is achieved by removing hydrogen sulfide from the fuel gas before it is burned; or any three hour period during which the average concentration of sulfur dioxide in the gases discharged into the atmosphere from any fuel gas combustion device subject to Section 5(1) exceeds the level specified in Section 5(1) if compliance is achieved by removing sulfur dioxide from the combusted fuel gases.

2. Any twelve hour period during which the average concentration of sulfur dioxide in the gases discharged into the atmosphere from any Claus sulfur recovery plant subject to Section 5(2) exceeds 250 ppm at zero (0) percent oxygen on a dry basis if compliance with Section 5(2)(b) is achieved through the use of an oxidation control system or a reduction control system followed by incineration; or any twelve hour period during which the average concentration of hydrogen sulfide or reduced sulfur compounds in the gases discharged into the atmosphere of any Claus sulfur plant subject to Section 5(2) exceeds ten (10) ppm or 300 ppm, respectively, at zero (0) percent oxygen and on a dry basis if compliance is achieved through the use of a reduction control system not followed by incineration.

(d) Any six hour period during which the average emissions (arithmetic average of six contiguous one hour periods) of sulfur dioxide as measured by a continuous monitoring system exceed the standard under Section 5.

Section 7. Test Methods and Procedures.

(1) The reference methods in Appendix A of 40 CFR 60, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the provisions in Sections 3, 4 and 5 as follows:

(a) For gases released to the atmosphere from the fluid catalytic cracking unit catalyst regenerator:

1. Method 5 for the concentration of particulate matter and moisture content;

2. Method 1 for sample and velocity traverses; and

3. Method 2 for velocity and volumetric flow rate.

(b) For Method 5, the sampling time for each run shall be at least sixty (60) minutes and the sampling rate shall be at least 0.015 dscm/min (0.53 dscf/min), except that shorter sampling times may be approved by the Department when process variables or other factors preclude sampling for at least sixty (60) minutes.

(c) For exhaust gases from the fluid catalytic cracking unit catalyst regenerator prior to the emission control system; the integrated sample techniques of Method 3 and Method 4 for gas analysis and moisture content, respectively; Method 1 for velocity traverses; and Method 2 for velocity and volumetric flow rate.

(d) Coke burn-off rate shall be determined by the formula in Appendix A of this regulation.

(e) Particulate emissions shall be determined by the equation in Appendix B of this regulation.

(f) For each run emissions expressed in kg/1000 kg (lb/1000 lb) of coke burn-off in the catalyst regenerator shall be determined by the equation in Appendix C of this regulation.

(g) In those instances in which auxiliary liquid or solid fossil fuels are burned in an incinerator-waste heat boiler, the rate of particulate matter emissions permitted under Section 3(2) must be determined. Auxiliary fuel heat input, expressed in millions of cal/hr (MM BTU/hr) shall be calculated for each run by fuel flow rate measurement and analysis of the liquid or solid auxiliary fossil fuels. For each run, the rate of particulate emissions permitted under Section 3(2) shall be calculated from the equation in Appendix D of this regulation.

(2) For the purpose of determining compliance with Section 4, the integrated sample technique of Method 10 shall be used. The sample shall be extracted at a rate proportional to the gas velocity at a sampling point near the centroid of the duct. The sampling time shall not be less than sixty (60) minutes.

(3) For the purpose of determining compliance with Section 5(1), Method 11 shall be used to determine the concentration of hydrogen sulfide and Method 6 shall be used to determine the concentration of sulfur dioxide.

(a) If Method 11 is used, the gases sampled shall be introduced into the sampling train at approximately atmospheric pressure. Where refinery fuel gas lines are operating at pressures substantially above atmosphere, this may be accomplished with a flow control valve. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line. The minimum sampling time shall be ten (10) minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples of equal sampling time shall constitute one run. Samples shall be taken at approximately one (1) hour intervals. For most fuel gases, sample times exceeding twenty (20) minutes may result in depletion of the collecting solution, although fuel gases containing low concentrations of hydrogen sulfide may necessitate sampling for longer periods of time.

(b) If Method 6 is used, Method 1 shall be used for velocity traverses and Method 2 for determining velocity and volumetric flow rate. The sampling site for determining sulfur dioxide concentration by Method 6 shall be the same as for determining volumetric flow rate by Method 2. The sampling point in the duct for determining sulfur dioxide concentration by Method 6 shall be at the centroid of the cross section if the cross sectional area is less than five (5) square meters (fifty-four (54) ft. squared) or at a point no closer to the walls than one (1) meter (39 inches) if the cross sectional area is five (5) square meters or more and the centroid is more than one meter from the wall. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. The minimum sampling time shall be ten (10) minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples of equal sampling time shall consitute one run. Samples shall be taken at approximately one (1) hour intervals.

(4) For the purpose of determining compliance with Section 5(2), Method 6 shall be used to determine the concentration of sulfur dioxide and Method 15 shall be used to determine the concentration of sulfur dioxide and reduced sulfur compounds.

(a) If Method 6 is used, the procedure outlined in subsection (3)(b) of this section shall be followed except that each run shall span a minimum of four (4) consecutive hours of continuous sampling. A number of separate samples may be taken for each run, provided the total sampling time of these samples adds up to a minimum of four consecutive hours. Where more than one sample is used, the average sulfur dioxide concentration for the run shall be calculated as the time weighted average of the sulfur dioxide concentration for each sample according to the formula in Appendix E of this regulation.

(b) If Method 15 is used, each run shall consist of sixteen (16) samples taken over a minimum of three hours. The sampling point shall be at the centroid of the cross section of the duct if the cross sectional area is less than five (5) square meters (54 ft^2) or at a point no closer to the walls than one (1) meter (39 inches) if the cross sectional area is five (5) square meters or more and the centroid is more than one (1) meter from the wall. To insure minimum residence time for the sample inside the sample lines, the sampling rate shall be at least three (3) liters/ minute (0.1 cfm). The sulfur dioxide equivalent for each run shall be calculated as the arithmetic average of the sulfur dioxide equivalent of each sample during the run. Reference Method 4 shall be used to determine the moisture content of the gases. The sampling point for Method 4 shall be adjacent to the sampling point for Method 15. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. Each run shall span a minimum of four (4) consecutive hours of continuous sampling. A number of separate samples may be taken for each run provided the total sampling time of these samples adds up to a minimum of four (4) consecutive hours. Where more than one (1) sample is used, the average moisture content for the run shall be calculated as the time weighted average of the moisture content of each sample according to the formula in Appendix F of this regulation.

(5) An owner or operator of an affected facility may request the Department to determine opacity of emissions from the affected facility during any performance test covered under 401 KAR 59:005, Section 2. In such event the provisions of 401 KAR 50:055, Section 2(6) shall apply.

Adopted: ____________

Approved as to form and legality:

Office of General Counsel [illegible] Secretary

APPENDIX A TO 401 KAR 59:045

Formula for Coke Burn-off Rate

$$R_c=0.2982\ Q_{RE}(\%CO_2+\%CO)+2.088\ Q_{RA}-0.0994Q_{RE}\left(\frac{\%CO}{2}+\%CO_2+\%O_2\right)\ \text{(metric units)}$$

or

$$R_c=0.0186\ Q_{RE}(\%CO_2+\%CO)+0.1303\ Q_{RA}-0.0062\ Q_{RE}\left(\frac{\%CO}{2}+\%CO_2+\%O_2\right)\text{(English units)}$$

Where:

R_c = coke burn-off rate, kg/hr (lb/hr)

0.2982 = metric units material balance factor divided by 100, kg-min/hr-m^3.

0.0186 = English units material balance factor divided by 100, lb-min/hr-ft^3.

Q_{RE} = fluid catalytic cracking unit catalyst regenerator exhaust gas flow rate before entering the emission control system, as determined by Method 2, dscm/min (dscf/min).

$\%CO_2$ = percent carbon dioxide by volume, dry basis, as determined by Method 3.

$\%CO$ = percent carbon monoxide by volume dry basis, as determined by Method 3.

$\%O_2$ = percent oxygen by volume, dry basis, as determined by Method 3.

2.088 = metric units material balance factor divided by 100, kg-min/hr-m^3.

0.1303 = English units material balance factor divided by 100, lb-min/hr-ft^3

Q_{RA} = air rate to fluid catalytic cracking unit catalyst regenerator, as determined from fluid catalytic cracking unit control room instrumentation, dscm/min (dscf/min).

0.0994 = metric units material balance factor devided by 100, kg-min/hr-m^3.

0.0062 = English units material balance factor divided by 100, lb-min/hr-ft^3.

APPENDIX B TO 401 KAR 59:045

Equation to Determine Particulate Emissions

$RE = (60 \times 10^{-6})\ Q_{RV}C_s$ (metric units)

or

$RE = (8.57 \times 10^{-3})\ Q_{RV}C_s$ (English units)

or

RE = particulate emission rate, kg/hr (lb/hr)

Where:

60×10^{-6} = metric units conversion factor, min-kg/hr-mg.

8.57×10^{-3} = English units conversion factor, min-lb/hr-gr.

Q_{RV} = volumetric flow rate of gases discharged into the atmosphere from the fluid catalytic cracking unit catalyst regenerator following the emission control system, as determined by Method 2, dscm/min (dscf/min).

C_s = particulate emission concentration discharged into the atmosphere, as determined by Method 5, mg/dscm (gr/dscf).

APPENDIX C TO 401 KAR 59:045

Equation to Determine Emissions (expressed in kg/1000 kg of coke burn-off) in the catalyst regenerator.

$$R_s = 100 \frac{Re}{Rc} \text{ (metric or English units)}$$

Where:

R_s = particulate emission rate, kg/1000 kg (lb/1000 lb) of coke burn-off in the fluid catalytic cracking unit catalyst regenerator.

1000 = conversion factor, kg to 1000 kg (lb to 1000 lb).

Re = particulate emission rate, kg/hr (lb/hr).

Rc = coke burn-off rate, kg/hr (lb/hr)

APPENDIX D TO 401 KAR 59:045

Equation for particulate emissions of auxiliary heat input expressed in millions of cal/hr (English units: millions of BTU/hr)

$$R_s = 1.0 + \frac{0.18\ H}{R_c} \quad \text{(metric units)}$$

or

$$R_s = 1.0 + \frac{0.10\ H}{Rc} \quad \text{(English units)}$$

Where:

R_s = allowable particulate emission rate, kg/1000 kg (lb/1000 lb) of coke burn-off in the fluid catalytic cracking unit catalyst regenerator.

1.0 = emission standard, 1.0 kg/1000 kg (1.0 lb/1000 lb) of coke burn-off in the fluid catalytic cracking unit catalyst regenerator.

0.18 = metric units maximum allowable incremental rate of particulate emissions, g/million cal.

0.10 = English units maximum allowable incremental rate of particulate emissions, lb/million BTU.

H = heat input from solid or liquid fossil fuel, million cal/hr (million BTU/hr).

R_c = coke burn-off rate, kg/hr (lb/hr).

APPENDIX E TO 401 KAR 59:045

Equation for time weighted average of SO_2 concentration

$$C_R = \sum_{i=1}^{N} C_{Si} \frac{t_{Si}}{T}$$

Where:

C_R = SO_2 concentration for the run.

N = Number of samples.

C_{Si} = SO_2 concentration for sample i.

t_{si} = Continuous sampling time of sample i.

T = Total continuous sampling time of all N samples

APPENDIX F TO 401 KAR 59:045

Equation for the time weighted average of the moisture content.

$$B_{wo} = \sum_{i=1}^{N} B_{si} \quad \frac{t_{si}}{T}$$

Where:

B_{wo} = Proportion by volume of water vapor in the gas stream for the run.

N = Number of samples.

B_{si} = Proportion by volume of water vapor in the gas stream for the sample i.

t_{si} = Continuous sampling time for sample i.

T = Total continuous sampling time of all N samples.

401 KAR 59:046. Selected new petroleum refining processes and equipment.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced on or after the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any other county and is a part of a major source of volatile organic compounds.

Section 2. Definitions.

(1) "Affected facility" means vacuum producing systems and process unit turnarounds associated with a petroleum refinery.

(2) "Vacuum producing systems" means equipment which produces a partial vacuum in a vessel.

(3) "Process unit turnaround" means the shutting down, depressurization, and purging of a process unit or vessel.

(4) "Classification date" means the effective date of this regulation.

Section 3. Standard for Hydrocarbons. The owner or operator of an affected facility shall install, operate, and maintain all equipment necessary to accomplish the following:

(1) Vacuum producing systems. All gaseous hydrocarbons emitted from condensers, hot wells, vacuum pumps, and accumulators be collected and vented to a firebox, flare or other control device of equivalent efficiency as determined by the Department.

(2) Process unit turnaround. The gaseous hydrocarbons purged from a process unit or vessel shall be vented to a firebox, flare, or other control device of equivalent efficiency as determined by the Department until the pressure in the process unit is less than five (5) psig.

Section 4. Monitoring and Reporting Requirements.

(1) The owner or operator shall:

(a) Keep a record of each process unit turnaround,

(b) Record the approximate hydrocarbon concentration when the hydrocarbons were first discharged to the atmosphere,

(c) Record the approximate total quantity of hydrocarbons emitted to the atmosphere.

(2) The owner or operator shall retain these records for at least two years and submit them to the Department upon request.

401 KAR 59:050. New storage vessels for petroleum liquids.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced on or after the classification date defined below, which is located:

(1) in an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) in any other county and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Affected facility" means a storage vessel for petroleum liquids which has a storage capacity of greater than 580 gallons.

(2) "Storage vessel" means any tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

(a) Pressure vessels which are designed to operate in excess of fifteen (15) pounds per square inch gauge without emissions to the atmosphere except under emergency conditions,

(b) Subsurface caverns or porous rock reservoirs, or

(c) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(3) "Petroleum liquids" means crude petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Number 2 through Number 6 fuel oils, gas turbine fuel oil Number 2-GT through 4-GT, or diesel fuel oils Numbers 2-D and 4-D as specified by the Department.

(4) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, or reforming of unfinished petroleum derivatives.

(5) "Crude petroleum" means a naturally occurring mixture which consists of hydrocarbons and/or sulfur, nitrogen and/or oxygen derivatives of hydrocarbons and which is a liquid at standard conditions.

[(5) "Hydrocarbon" means any organic compound consisting predominantly of carbon and hydrogen.]

(6) "Condensate" means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

(7) "True vapor pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods specified by the Department.

(8) "Floating roof" means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover, or covered floating roof, which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

(9) "Vapor recovery system" means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from the storage vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

(10) "Reid vapor pressure" is the absolute vapor pressure of volatile crude oil and volatile [non-viscous] petroleum liquids, except liquified petroleum gases, as determined by methods specified by the Department.

(11) "Submerged fill pipe" means any fill pipe the discharge of which is entirely submerged when the liquid level is six (6) inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean every fill pipe the discharge opening of which is entirely submerged when the liquid level is two (2) times the fill pipe diameter above the bottom of the tank.

(12) "Classification date" means April 9, 1972.

Section 3. Standard for Hydrocarbons. The owner or operator of any storage vessel to which this regulation applies shall store petroleum liquids as follows:

(1) If the storage vessel has a storage capacity greater than 40,000 gallons and if the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than seventy-eight (78) mm Hg (1.5 psia) but not greater than 570 mm Hg (11.1 psia) the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.

(2) If the storage vessel has a storage capacity greater than 40,000 gallons and if the true vapor pressure of the petroleum liquid as stored is greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

(3) If the storage vessel has a storage capacity greater than 580 gallons, and if the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 1.5 psia, as a minimum it shall be equipped with a permanent submerged fill pipe.

Section 4. Operating Requirements.

(1) There shall be no visible holes, tears, or other opening in the seal or any seal fabric; and,

(2) All openings, except stub drains, shall be equipped with covers, lids, or seals such that;

(a) The cover, lid, or seal is in the closed position at all times except when in actual use; and

(b) automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports; and

(c) rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

Section 5. Monitoring of Operations.

(1) The owner or operator of any storage vessel with a capacity of greater than 40,000 gallons to which this regulation applies shall, for each such storage vessel, maintain a file of each type of petroleum liquid stored, of the typical Reid vapor pressure of each type of petroleum liquid stored, and of the dates of storage. Dates on which the storage vessel is empty shall be shown.

(2) The owner or operator of any storage vessel with a capacity of greater than 40,000 gallons to which this regulation applies shall, for each such storage vessel, determine and record the average monthly storage temperature and true vapor pressure of the petroleum liquid stored at such temperature if:

(a) The petroleum liquid has a true vapor pressure, as stored, greater than twenty-six (26) mm Hg (0.5 psia) but less than seventy-eight (78) mm Hg (1.5 psia) and is stored in a storage vessel other than one equipped with a floating roof, a vapor recovery system or their equivalents; or

(b) The petroleum liquid has a true vapor pressure, as stored, greater than 470 mm Hg (9.1 psia) and is stored in a storage vessel other than one equipped with a vapor recovery system or its equivalent.

(3) The average monthly storage temperature is an arithmetic average calculated for each calendar month, or portion thereof if storage temperatures are determined at least once every seven (7) days.

(4) The true vapor pressure shall be determined by the procedures specified by the Department. This procedure is dependent upon determination of the storage temperature and the Reid vapor pressure, which requires sampling of the petroleum liquids in the storage vessels. Unless the Department requires in specific cases that the stored petroleum liquid be sampled, the true vapor pressure may be determined by using the average monthly storage temperature and the typical Reid vapor pressure. For those liquids for which certified specifications limiting the Reid vapor pressure exist, the Reid vapor pressure may be used. For other liquids, supporting analytical data must be made available on request to the Department when typical Reid vapor pressure is used.

401 KAR 59:055. New secondary lead smelters.

Section 1. Applicability. The provisions of this regulation shall apply to the following affected facilities (in secondary lead smelters) which commenced on or after the classification date defined below: Pot furnaces of more than 250 kg (550 lb) charging capacity, blast (cupola) furnaces, and reverberatory furnaces.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Classification date" means June 11, 1973.

(2) "Reverberatory furnace" includes the following types of reverberatory furnaces: stationary, rotating, rocking and tilting.

(3) "Secondary lead smelter" means any facility producing lead from a lead-bearing scrap material by smelting to the metallic form.

(4) "Lead" means elemental lead or alloys in which the predominant component is lead.

Section 3. Standard for Particulate Matter.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from a blast (cupola) or reverberatory furnace any gases which:

(a) Contain particulate matter in excess of fifty (50) mg/dscm (0.022 gr/dscf).

(b) Exhibit twenty (20) percent opacity or greater.

(2) On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from any pot furnace any gases which exhibit ten (10) percent opacity or greater.

Section 4. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Section 3 as follows:

(a) Reference Method 5 for the concentration of particulate matter and the associated moisture content;

(b) Reference Method 1 for sample and velocity traverse;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) For determining the concentration of particulate matter and associated moisture content, the sampling time for each run shall be at least sixty (60) minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the Department. Particulate sampling shall be conducted during representative periods of furnace operation, including charging and tapping.

401 KAR 59:060. New secondary brass and bronze ingot production plants.

Section 1. Applicability. The provisions of this regulation shall apply to the following affected facilities (in secondary brass or bronze ingot production plants) which commenced on or after the classification date defined below: Reverberatory and electric furnaces of 1,000 kg (2,205 lb) or greater production capacity and blast (cupola) furnaces of 250 kg/hr (550 lb/hr) or greater production capacity.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Brass or bronze" means any metal alloy containing copper as its predominant constituent, and lesser amounts of zinc, tin, lead, or other metals.

(2) "Reverberatory furnace" includes the following types of reverberatory furnaces: Stationary, rotating, rocking, and tilting.

(3) "Electric furnace" means any furnace which uses electricity to produce over fifty (50) percent of the heat required in the production of refined brass or bronze.

(4) "Blast furnace" means any furnace used to recover metal from slag.

(5) "Classification date" means June 11, 1973.

Section 3. Standard for Particulate Matter.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from a reverberatory furnace any gases which:

(a) Contain particulate matter in excess of fifty (50) mg/dscm (0.022 gr/dscf).

(b) Exhibit twenty (20) percent opacity or greater.

(2) On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from any blast (cupola) or electric furnace any gases which exhibit ten (10) percent opacity or greater.

Section 4. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Section 3 as follows:

(a) Reference Method 5 for the concentration of particulate matter and the associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) For Reference Method 5, the sampling time for each run shall be at least 120 minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the Department. Particulate matter sampling shall be conducted during representative periods of charging and refining, but not during pouring of the heat.

401 KAR 59:065. Steel plants using new basic oxygen process furnaces.

Section 1. Applicability. Provisions of this regulation are applicable to the following affected facilities (associated with steel plants) commenced on or after the classification date defined below: basic oxygen process furnaces, associated metallurgical equipment, and dust-handling equipment.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Basic oxygen process furnaces (BOPF)" means any furnace producing steel by charging scrap steel, hot metal and flux materials into a vessel and introducing a high volume of an oxygen-rich gas.

(2) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the control device and located at or near the control device for a BOPF and/or associated equipment subject to this regulation.

(3) "Control device" means the air pollution control equipment used to remove from the effluent gas stream, particulate matter generated by a BOPF and/or associated equipment.

(4) "Capture system" means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by a BOPF and associated equipment to the air pollution control device.

(5) "Steel production cycle" means the operations required to produce each batch of steel and includes the following major functions: scrap preheating (when used), scrap charging, hot metal charging, primary oxygen blowing (when used) and tapping.

(6) "Startup" means the setting into operation for the first steel production cycle of a relined BOPF or a BOPF which as been out of production for a minimum continuous time period of eight (8) hours.

(7) "Charge" means the addition of steel scrap or other materials into a BOPF followed by molten pig iron.

(8) "Tap" means the pouring of molten steel from a BOPF.

(9) "Classification date" means June 11, 1973.

Section 3. Standard for Particulate Matter. On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from a basic oxygen process furnace and/or associated metallurgical equipment located in the same shop any gases which:

(1) Exit from a control device and contain particulate matter in excess of

.022 gr/dscf

(2) Exit from a control device and exhibit opacity of

Ten (10) percent or more , except that an opacity of greater than ten (10) percent but less than twenty (20) percent may occur once per steel production cycle.

Section 4. Monitoring of Operations.

(1) The owner or operator of an affected facility shall maintain a single time-measuring instrument which shall be used in recording daily the time and duration of each steel production cycle, and the information:

time and duration of each diversion of exhaust gases from the main stack serving the BOPF;

(2) The owner or operator of any affected facility that uses venturi scrubber emission control equipment shall install, calibrate, maintain and continuously operate monitoring devices as follows.

(a) A monitoring device for the continuous measurement of the pressure loss through the venturi construction of the control equipment.

The monitoring device is to be certified by the manufacturer to be accurate within ± 250 Pa (± one (1) inch water)

(b) A monitoring device for the continuous measurement of the water supply pressure to the control equipment.

The monitoring device is to be certified by the manufacturer to be accurate within ± five (5) percent of the design water supply pressure. The monitoring device's pressure sensor or pressure tap must be located close to the water discharge point. The Department may be consulted for approval of alternative locations for the pressure sensor or tap.

(c) All monitoring devices shall be synchronized each day with the time-measuring instrument used under subsection (1) of this section. The chart recorder error directly after synchronization shall not exceed 0.08 cm (one-thirty-second of an inch).

(d) All monitoring devices shall use chart recorders which are operated at a minimum chart speed of 3.8 cm/hr (1.5 in/hr).

(e) All monitoring devices are to be recalibrated annually, and at other times as the Department may require, in accordance with the manufacturer's recommended procedures.

(3) Any owner or operator subject to requirements under subsection (2) of this section shall report for each calendar quarter all measurements over any three-hour period that average more than ten (10) percent below the average levels maintained during the most recent performance test conducted under Section 5 in which the affected facility demonstrated compliance with the standard under Section 3. The accuracy of the respective measurements not to exceed the values specified in subsection (2) (a) and (b) of this section may be taken into consideration when determining the measurement results that must be reported.

Section 5. Test Methods and Procedures.

(1) Reference methods in Appendix A of 40 CFR 60, except as provided under 401 KAR 50:045, shall be used to determine compliance with the standards prescribed under Section 3 as follows:

(a) Reference Method 5 for the concentration of particulate matter and associated moisture content;

(b) Reference Method 1 for sample and velocity traverses

(c) Reference Method 2 for volumetric flow rate;
(d) Reference Method 3 for gas analysis; and
(e) Reference Method 9 for visible emissions
For the purpose of this regulation, opacity observations taken at fifteen (15) second intervals immediately before and after a diversion of exhaust gases from the stack may be considered to be consecutive for the purpose of computing an average opacity for a six (6) minute period. Observations taken during a diversion shall not be used in determining compliance with the opacity standard.

(2) For Reference Method 5, the sampling for each run shall continue for an integral number of cycles with total duration of at least sixty (60) minutes. The sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times when necessitated by process variables or other factors, may be approved by the Department. A cycle shall start at the beginning of either the scrap preheat or the oxygen blow and shall terminate immediately prior to tapping.

(3) Sampling of flue gases during each steel production cycle shall be discontinued whenever all flue gases are diverted from the stack and shall be resumed after each diversion period

401 KAR 59:070. New sewage treatment plants.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which is each incinerator commenced on or after the classification date defined below which combusts wastes containing more than ten (10) percent sewage sludge (dry basis) produced by municipal sewage treatment plants, or each incinerator that charges more than 1000 kg (2205 lb) per day municipal sewage sludge (dry basis).

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010. "Classification date" means June 11, 1973.

Section 3. Standard for Particulate Matter. On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator of any sewage sludge incinerator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere of:

(1) Particulate matter at a rate in excess of 0.65 g/kg dry sludge input (1.30 lb/ton dry sludge input).

(2) Any gases which exhibit twenty (20) percent opacity or greater.

Section 4. Monitoring of Operations. The owner or operator of any sludge incinerator subject to the provisions of this regulation shall:

(1) Install, calibrate, maintain, and operate a flow measuring device which can be used to determine either the mass or volume of sludge charged to the incinerator. The flow measuring device shall have an accuracy of ± five (5) percent over its operating range.

(2) Provide access to the sludge charged so that a well-mixed representative grab sample of the sludge can be obtained.

(3) Install, calibrate, maintain and operate a weighing device for determining the mass of any municipal solid waste charged to the incinerator when sewage sludge and municipal solid waste are incinerated together. The weighing device shall have an accuracy of ± five (5) percent over its operating range.

Section 5. Test Methods and Procedures.

(1) The reference methods, as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided under 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Section 3 as follows:

(a) Reference Method 5 for the concentration of particulate matter and associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) For Reference Method 5, the sampling time for each run shall be at least sixty (60) minutes and the sampling rate shall be at least 0.015 dscm/min (0.53 dscf/min), except that shorter sampling times, when necessitated by process variables or other factors may be approved by the Department.

(3) Dry sludge charging rate shall be determined as follows:

(a) Determine the mass (Sm) or volume (Sv) of sludge charged to the incinerator during each run using a flow measuring device meeting the requirements of Section 4(1). If total input during a run is measured by a flow measuring device, such readings shall be used. Otherwise, record the flow measuring device readings at five (5) minute intervals during a run. Determine the quantity charged during each interval by averaging the flow rates at the beginning and end of the interval and then multiplying the average for each interval by the time for each interval. Then add the quantity for each interval to determine the total quantity charged during the entire run, (Sm) or (Sv).

(b) Collect samples of the sludge charged to the incinerator in non-porous collecting jars at the beginning of each run and at approximately one (1) hour intervals thereafter until the test ends, and determine for each sample the dry sludge content (total solids residue) in accordance with the method specified by the Department.

(c) Determine the quantity of dry sludge per unit sludge charged in terms of either average quantity of dry sludge per unit volume of sludge charged to the incinerator, or average ratio of quantity of dry sludge to quantity of sludge charged to the incinerator.

1. If the volume of sludge charged is used, the equation in Appendix A to this regulation shall be used to determine the quantity of dry sludge per unit sludge charged.

2. If the mass of sludge charged is used, the equation in Appendix B to this regulations shall be used to determine the quantity of dry sludge per unit sludge charged.

(4) Particulate emission rate shall be determined by the equation in Appendix C of this regulation.

(5) Compliance with Section 3(1) shall be determined by the formula in Appendix D of this regulation.

APPENDIX A TO 401 KAR 59:070

Equation to determine the quantity of dry sludge per unit sludge charged, using volume of sludge charged.

$$S_d = (60 \times 10^{-3}) \frac{R_{DV} S_V}{T} \quad \text{(metric units)}$$

$$S_D = (8.021) \frac{R_{DV} S_V}{T} \quad \text{(English units)}$$

Where:

S_D = average dry sludge charging rate during the run, kg/hr. (lb/hr).

R_{DV} = average quantity of dry sludge per unit volume of sludge charged to the incinerator, mg/l (lb/ft^3).

S_V = sludge charged to the incinerator during the run, m^3 (gal).

T = duration of run, min.

60×10^{-3} = metric units conversion factor, l-kg-min/m^3-mg-hr

8.021= English units conversion factor, ft^3-min/gal-hr.

APPENDIX B TO 401 KAR 59:070

Equation to determine the quantity of dry sludge per unit charged, using the mass of sludge charged.

$$S_D = (60) \frac{R_{DM} S_M}{T} \text{ (metric or English units)}$$

Where:

S_D = average dry sludge charging rate during the run, kg/hr (lb/hr.)

R_{DM} = average ratio of quantity of dry sludge to quantity of sludge charged to the incinerator, mg/mg (lb/lb).

S_M = sludge charged during the run, kg (lb).

T = duration of run, min.

60 = conversion factor, min/hr.

APPENDIX C TO 401 KAR 59:070

Equation to determine particulate emission rate.

$C_{aw} = C_s Q_s$ (metric or English units)

Where:

C_{aw} = particulate matter mass emissions, mg/hr (lb/hr).

C_s = particulate matter concentation, mg/m³ (lb/dscf).

Q_s = volumetric stack gas flow rate, dscm/hr (dscf/hr). Q_s and C_s shall be determined using Methods 2 and 5, respectively.

APPENDIX D TO 401 KAR 59:070

Equation to determine compliance with Section 3(1).

$$C_{ds} = (10^{-3}) \frac{C_{aw}}{S_D} \quad \text{(metric units)}$$

$$C_{ds} = (2000) \frac{C_{aw}}{S_D} \quad \text{(English units)}$$

Where:

D_{ds} = particulate emission discharge, g/kg dry sludge (lb/ton dry sludge).

10^{-3} = metric conversion faction, g/mg.

2000 = English conversion factor, lb/ton.

C_{aw} = Particulate matter mass emissions as calculated from Appendix C to this regulation.

401 KAR 59:080. New kraft (sulfate) pulp mills.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which:

(1) Is associated with a kraft (sulfate) pulp mill;

(2) Is not subject to another standard of performance within this chapter with respect to particulates or total reduced sulfur;

(3) Commenced on or after the classification date defined below but before September 24, 1976.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Total reduced sulfur (TRS)" means all reduced sulfur compounds including but not limited to hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide expressed in terms of hydrogen sulfide.

(2) "Classification date" means April 9, 1972.

Section 3. Standard for Particulate Matter. No person shall cause, suffer, allow, or permit particulate emissions from the following affected facilities in excess of:

(1) Recovery furnace: 2.3 pounds per ton of equivalent unbleached dried pulp produced;

(2) Lime kilns: 1.0 pound per ton of equivalent unbleached air dried pulp produced;

(3) Dissolving smelt tanks: 0.5 pounds per ton of equivalent unbleached air dried pulp produced;

(4) No person shall cause, suffer, allow, or permit visible emissions in excess of thirty-five (35) percent opacity.

Section 4. Standard for Total Reduced Sulfur (TRS).

(1) No person shall cause, suffer, allow, or permit total reduced sulfur emissions from the recovery furnace of any kraft (sulfate) pulp mill in excess of an exit stack gas concentration of fifteen (15) parts per million by volume expressed as an arithmetic average over any consecutive twenty-four (24) hour period.

(2) No person shall cause, allow, or permit total reduced sulfur emissions from the recovery furnace of any kraft (sulfate) pulp mill in excess of an exit stack gas concentration of forty (40) parts per million by volume for more than sixty (60) total minutes in any twenty-four (24) hour period.

(3) No person shall cause, suffer, allow, or permit the emission of various noncondensable gas streams from digester relief, blow tank relief, evaporator hot wells, or multiple effect evaporators containing total reduced sulfur in any affected facility unless treated by thermal oxidation or an equivalent method with ninety-eight (98) percent efficiency.

(4) Control of other points of emission of total reduced sulfur, shall be considered on an individual basis as determined by the Department.

Section 5. Test Methods and Procedures. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Sections 3 and 4 shall be conducted according to the following methods, filed by reference in 401 KAR 50:015:

(1) Reference Method 5 for the emission rates of particulate matter and the associated moisture content.

(2) Reference Method 1 for sample and velocity traverses.

(3) Reference Method 2 for velocity and volumetric flow rate.

(4) Reference Method 3 for gas analysis.

(5) Reference Method 9 for visible emissions.

(6) Reference Method 16 for the concentration of TRS. All concentrations of TRS from the lime kiln and recovery furnace that are measured as required by this subsection shall be corrected to ten (10) percent by volume oxygen and eight (8) percent by volume oxygen, respectively, when the oxygen concentrations exceed these values.

(7) Reference Method 17 (in-stack filtration) may be used as an alternative method for Reference Method 5 provided that a constant value of 0.009 g/dscm (0.004 gr/dscf) is added to the results of Reference Method 17 and the stack temperature is no greater than 205°C. (400°F).

(8) For particulate tests, the sampling time for each run shall be at least sixty (60) minutes and the sampling rate shall be at least 0.85 dscm/hr. (0.53 dscf/hr) except that shorter sampling times, when necessitated by process variable or other factors, may be approved by the Department. Water shall be used as the clean up solvent instead of acetone in the sample recovery procedure outlined in Reference Method 5 or 17.

401 KAR 59:081. New kraft pulp mills.

Section 1. Applicability.

(1) The provisions of this regulation are applicable to the following affected facilities in kraft pulp mills: digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, recovery furnace, smelt dissolving tank, lime kiln, and condensate stripper system. In pulp mills where kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of this regulation are applicable when any portion of the material charged to an affected facility is produced by the kraft pulping operation.

(2) Any affected facility under subsection (1) of this section that commences on or after the classification date defined below is subject to the requirements of this regulation.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the same meaning given them in 401 KAR 50:010.

(1) "Kraft pulp mill" means any pulp mill which produces pulp from wood by cooking (digesting) wood chips in a water solution of sodium hydroxide and sodium sulfide (white liquor) at high temperature and pressure. Regeneration of the cooking chemicals through a recovery process is also considered a part of the kraft pulp mill.

(2) "Neutral sulfite semichemical pulping operation" means any operation in which pulp is produced from wood by cooking (digesting) wood chips in a solution of sodium sulfite and sodium bicarbonate, followed by mechanical defibrating (grinding).

(3) "Total reduced sulfur (TRS)" means the sum of the sulfur compounds hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide, that are released during the kraft pulping operation and measured by Reference Method 16 of Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015.

(4) "Digester system" means each continuous digester or each batch digester used for the cooking of wood in white liquor, and associated flash tank(s), blow tank(s), chip steamer(s), and condenser(s).

(5) "Brown stock washer system" means brown stock washers and associated knotters, vacuum pumps, and filtrate tanks used to wash the pulp following the digester system.

(6) "Multiple-effect evaporator system" means the multiple-effect evaporators and associated condenser(s) and hotwell(s) used to concentrate the spent cooking liquid that is separated from the pulp (black liquor).

(7) "Black liquor oxidation system" means the vessels used to oxidize, with air or oxygen, the black liquor, and associated storage tank(s).

(8) "Recovery furnace" means either a straight kraft recovery furnace or a cross recovery furnace, and includes the direct-contact evaporator for a direct-contact furnace.

(9) "Straight kraft recovery furnace" means a furnace used to recover chemicals consisting primarily of sodium and sulfur compounds by burning black liquor which on a quarterly basis contains seven (7) percent by weight or less of the total pulp solids from the neutral sulfite semichemical process or has green liquor sulfidity of twenty-eight (28) percent by weight or less.

(10) "Cross recovery furnace" means a furnace used to recover chemicals consisting primarily of sodium and sulfur compounds by burning black liquor which on a quarterly basis contains more than seven (7) percent by weight of the total pulp solids from the neutral sulfite semichemical process and has a green liquor sulfidity of more than twenty-eight (28) percent by weight.

(11) "Black liquor solids" means the dry weight of the solids which enter the recovery furnace in the black liquor.

(12) "Green liquor sulfidity" means the sulfidity of the liquor which leaves the smelt dissolving tank.

(13) "Smelt dissolving tank" means a vessel used for dissolving the smelt collected from the recovery furnace.

(14) "Lime kiln" means a unit used to calcine lime mud, which consists primarily of calcium carbonate, into quicklime, which is calcium oxide.

(15) "Condensate stripper system" means a column, and associated condensers, used to strip with air or steam, TRS compounds from condensate streams from various processes within a kraft pulp mill.

(16) "Classification date" means September 24, 1976.

Section 3. Standard for Particulate Matter. On and after the date on which the performance test required by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere:

(1) From any recovery furnace any gases which:

(a) Contain particulate matter in excess of 0.10 g/dscm (0.044 gr/dscf) corrected to eight (8) percent oxygen.

(b) Exhibit thirty-five (35) percent opacity or greater.

(2) From any smelt dissolving tank any gases which contain particulate matter in excess of 0.1 g/kg black liquor solids (dry weight) (0.2 lb/ton black liquor solids (dry weight)).

(3) From any lime kiln any gases which contain particulate matter in excess of:

(a) 0.15 g/dscm (0.067 gr/dscf) corrected to ten (10) percent oxygen, when gaseous fossil fuel is burned.

(b) 0.30 g/dscm (0.13 gr/dscf) corrected to ten (10) percent oxygen, when liquid fossil fuel is burned.

Section 4. Standard for Total Reduced Sulfur (TRS) On and after the date on which the performance test required by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere:

(1) From any digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, or condensate stripper system any gases which contain TRS in excess of five (5) ppm by volume on a dry basis, corrected to ten (10) percent oxygen, unless the following conditions are met:

(a) The gases are combusted in a lime kiln subject to the provisions of subsection (5) of this section; or

(b) The gases are combusted in a recovery furnace subject to the provisions of subsections (2) or (3) of this section; or

(c) The gases are combusted with other waste gases in an incinerator or other device, or combusted in a lime kiln or recovery furnace not subject to the provisions of this regulation, and are subjected to a minimum temperature of 1200°F. for at least 0.5 second; or

(d) It has been demonstrated to the Department's satisfaction by the owner or operator that incinerating the exhaust gases from a new, modified, or reconstructed black liquor oxidation system or brown stock washer system in an existing facility is technologically or economically not feasible. Any existing system will become subject to the provisions of this regulation if the facility is changed so that the gases can be incinerated.

(e) The gases from the digester system, brown stock washer system, or black liquor oxidation system are controlled by a means other than combustion. In this case, these systems shall not discharge any gases to the atmosphere which contain TRS in excess of five (5) ppm by volume on a dry basis, corrected to the actual oxygen content of the untreated gas stream.

(2) From any straight kraft recovery furnace any gases which contain TRS in excess of five (5) ppm by volume on a dry basis, corrected to eight (8) percent oxygen.

(3) From any cross recovery furnace any gases which contain TRS in excess of twenty-five (25) ppm by volume on a dry basis, corrected to eight (8) percent oxygen.

(4) From any smelt dissolving tank any gases which contain TRS in excess of 0.0084 g/kg black liquor solids (dry weight) (0.0168 lb/ton liquor solids (dry weight)).

(5) From any lime kiln any gases which contain TRS in excess of eight (8) ppm by volume on a dry basis, corrected to ten (10) percent oxygen.

Section 5. Monitoring of Emissions and Operations.

(1) Any owner or operator subject to the provisions of this regulation shall install, calibrate, maintain, and operate the following continuous monitoring systems:

(a) A continuous monitoring system to monitor and record the opacity of the gases discharged into the atmosphere from any recovery furnace. The span of this system shall be set at seventy (70) percent opacity.

(b) Continuous monitoring systems to monitor and record the concentration of TRS emissions on a dry basis and the percent of oxygen by volume on a dry basis in the gases discharged into the atmosphere from any lime kiln, recovery furnace, digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, or condensate stripper system, except where the provisions of subsection 4(1)(c), (d) apply. These systems shall be located downstream of the control device(s) and the span(s) of these continuous monitoring system(s) shall be set:

1. At a TRS concentration of thirty (30) ppm for the TRS continuous monitoring system, except that for any cross recovery furnace the span shall be set at fifty (50) ppm.

2. At twenty (20) percent oxygen for the continuous oxygen monitoring system.

(2) Any owner or operator subject to the provisions of this regulation shall install, calibrate, maintain, and operate the following continuous monitoring devices:

(a) A monitoring device which measures the combustion temperature at the point of incineration of effluent gases which are emitted from any digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, or condensate stripper system where the provisions of Section 4(1)(c) apply. The monitoring device is to be certified by the manufacturer to be accurate within ± one (1) percent of the temperature being measured.

(b) For any lime kiln or smelt dissolving tank using a scrubber emission control device:

1. A monitoring device for the continuous measurement of the pressure loss of the gas stream through the control equipment. The monitoring device is to be certified by the manufacturer to be accurate to within a gage pressure of ± 500 pascals (ca ± two (2) inches water gage pressure).

2. A monitoring device for the continuous measurement of the scrubbing liquid supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± fifteen (15) percent of design scrubbing liquid supply pressure. The pressure sensor or tap is to be located close to the scrubber liquid discharge point. The Department may be consulted for approval of alternative locations.

(3) Except where the provisions of Section 4(1)(d) or (4) apply, any owner or operator subject to the provisions of this regulation shall:

(a) Calculate and record on a daily basis twelve (12) hour average TRS concentrations for the two (2) consecutive periods of each operating day. Each twelve (12) hour average shall be defined as the arithmetic mean of the appropriate twelve (12) contiguous one (1) hour average total reduced sulfur concentrations provided by each continuous monitoring system installed under subsection (1)(b) of this section.

(b) Calculate and record on a daily basis twelve (12) hour average oxygen concentrations for the two consecutive periods of each operating day for the recovery furnace and lime kiln. These twelve (12) hour averages shall correspond to the twelve (12) hour average TRS concentrations under paragraph (a) of this subsection and shall be determined as an arithmetic mean of the appropriate twelve (12) contiguous one (1) hour average oxygen concentrations provided by each continuous monitoring system installed under subsection (1)(b) of this section.

(c) Correct all twelve (12) hour average TRS concentrations to ten (10) volume percent oxygen, except that all twelve (12) hour average TRS concentration from a recovery furnace shall be corrected to eight (8) percent by volume using the equation in Appendix A of this regulation.

(4) For the purpose of reports required under 401 KAR 59:005, Section 3(3), any owner or operator subject to the provisions of this regulation shall report periods of excess emissions as follows:

(a) For emissions from any recovery furnace periods of excess emissions are:

1. All twelve (12) hour averages of TRS concentrations above five (5) ppm by volume for straight kraft recovery furnaces and above twenty-five (25) ppm by volume for cross recovery furnaces.

2. All six (6) minute average opacities that exceed thirty-five (35) percent.

(b) For emissions from any lime kiln, periods of excess emissions are all twelve (12) hour average TRS concentration above eight (8) ppm by volume.

(c) For emissions from any digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, or condensate stripper system periods of excess emissions are:

1. All twelve (12) hour average TRS concentrations above five (5) ppm by volume unless the provisions of Section 4(1)(a), (b), (d) apply; or

2. All periods in excess of five (5) minutes and their duration during which the combustion temperature at the point of incineration is less than 1200°F. where the provisions of Section 4(1) apply.

(5) The Department will not consider periods of excess emissions reported under subsection (4) of this section to be indicative of a violation of 401 KAR 50:055, Section 2(5), provided that:

(a) The percent of the total number of possible contiguous periods of excess emissions in a quarter (excluding periods of startup, shutdown, or malfunction and periods when the facility is not operating) during which excess emissions occur does not exceed:

1. One percent for TRS emissions from recovery furnaces.

2. Six (6) percent for average opacities from recovery furnaces.

(b) The Department determines that the affected facility, including air pollution control equipment, is maintained and operated in a manner which is consistent with good air pollution control practice for minimizing emissions during periods of excess emissions.

Section 6. Test Methods and Procedures.

(1) Reference methods in Appendix A of 40 CFR 60, except as provided for in 401 KAR 50:045, shall be used to determine compliance with Section 3 as follows:

(a) Method 5 for the concentration of particulate matter and the associated moisture content,

(b) Method 1 for sample and velocity traverses,

(c) When determining compliance with Section 3 (2), Method 2 for velocity and volumetric flow rate,

(d) Method 3 for gas analysis, and

(e) Method 9 for visible emissions.

(2) For Method 5, the sampling time for each run shall be at least sixty (60) minutes and the sampling rate shall be at least 0.85 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the Department. Water shall be used as the cleanup solvent instead of acetone in the sample recovery procedure outlined in Method 5.

(3) Method 17 (in-stack filtration) may be used as an alternate method for Method 5 for determining compliance with Section 3(1)(a) provided, that a constant value of 0.009 g/dscm (0.004 gr/dscf) is added to the results of Method 17 and the stack temperature is no greater than 205°C (ca. 400°F). Water shall be used as the cleanup solvent instead of acetone in the sample recovery procedure outlined in Method 17.

(4) For the purpose of determining compliance with Section 4, the following reference methods shall be used:

(a) Method 16 for the concentration of TRS;

(b) Method 3 for gas analysis; and

(c) When determining compliance with Section 4(4), use the results of Method 2, Method 16, and the black liquor solids feed rate in the equation in Appendix B of this regulation to determine the TRS emission rate.

(d) When determining whether a furnace is straight kraft recovery furnace or a cross recovery furnace, TAPPI Method T.624, filed by reference in 401 KAR 50:015, shall be used to determine sodium sulfide, sodium hydroxide and sodium carbonate concentrations. These determinations shall be made three times daily from the green liquor and the daily average values shall be converted to sodium oxide and substituted into the equation in Appendix C of this regulation to determine the green liquor sulfidity.

(5) All concentrations of particulate matter and TRS required to be measured by this section from lime kilns or incinerators shall be corrected to ten (10) percent by volume oxygen and those concentrations from recovery furnaces shall be corrected to eight (8) percent by volume oxygen. These corrections shall be made in the manner specified in Section 5(3)(c).

APPENDIX A to 401 KAR 59:081

Formula to correct 12 hour average TRS concentration from a recovery furnace to 8% volume.

$$C_{corr} = C_{meas} X (21- X/21 -y)$$

Where:

C_{corr} = the concentration corrected for oxygen.

C_{meas} = the concentration uncorrected for oxygen.

X = the volumetric oxygen concentration in percentage to be corrected to (8 percent for recovery furnaces and 10 percent for lime kilns, incinerators, or other devices).

y = the measured 12-hour average volumetric oxygen concentration.

APPENDIX B To 401 KAR 59:081

Black liquor solids feed rate equation.

$$E = (C_{H_2S}\, F_{H_2S} + C_{MeSH}\, F_{MeSH} + C_{DMS}\, F_{DMS} + C_{DMDS}\, F_{DMDS})\, ({}^{Q}{}_{sd})/_{BLS}$$

Where:

E = Mass of TRS emitted per unity of black liquor solids (g/kg) (lb/ton)

C_{H_2S} = Average conc. of hydrogen sulfide (H_2S) during the test period, (ppm).

C_{MeSH} = Average conc. of methyl mercaptan (MeSH) during the test period, (ppm).

C_{DMS} = Average conc. of dimethyl sulfide (DMS) during the test period (ppm).

C_{DMDS} = Average conc. of dimethyl disulfide (DMDS) during the test period (ppm).

F_{H_2S} = 0.001417 g/m^3 ppm for metric units
= 0.08844 lb/ft^3 ppm for English Units

F_{MeSH} = 0.00200 g/m^3 ppm for metric units
= 0.1248 lb/ft^3 ppm for English Units

F_{DMS} = 0.002583 g/m^3 ppm for metric units
= 0.1612 lb/ft^3 ppm for English Units

F_{DMDS} = 0.003917 g/m^3 ppm for metric units
= 0.2445 lb/ft^3 ppm for English Units

Q_{sd} = dry volumetric stack gas flow rate corrected to standard conditions, dscm/hr (dscf/hr).

BLS = black liquor solids feed rate, kg/hr. (lb/hr.)

APPENDIX C to 401 KAR 59:081

Equation to determine green liquor sulfidity.

$$GLS = 100\ C_{Na_2S}/C_{Na_2S} + C_{NaOH} + C_{Na_2CO_3}$$

WHERE:

GLS = percent green liquor sulfidity

C_{Na_2S} = average conc. of Na_2S expressed as Na_2O (mg/L)

C_{NaOH} = average conc. of NaOH expressed as Na_2O (mg/L)

$C_{Na_2CO_3}$ = average conc. of $Na_2\ CO_3$ expressed as Na_2O (mg/L)

401 KAR 59:085. New sulfite pulp mills.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which:

(1) Is associated with a sulfite pulp mill;

(2) Is not subject to another standard of performance within this chapter with respect to sulfur oxides;

(3) Commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010. "Classification date" means April 9, 1972.

Section 3. Standards for Sulfur Oxides Emissions. No person shall cause or permit sulfur oxides emissions from blow pits, washer vents, storage tanks, digester relief, recovery system, etc., to exceed 9.0 lb. per air dried ton of pulp produced.

Section 4. Test Methods and Procedures. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Section 3 shall be conducted according to the following methods, filed by reference in 401 KAR 50:015:

(1) Reference Method 1 for velocity traverses.

(2) Reference Method 2 for velocity and volumetric flow rate.

(3) Reference Method 3 for gas analysis.

(4) Reference Method 6 for sulfur oxide emission rates.

(a) The sampling point shall be at the centroid of the duct or stack or at a point no closer to the walls than one (1) m (3.28 ft.). The sample shall be extracted at a rate proportional to the gas velocity at the sampling point.

(b) The minimum sampling time shall be twenty (20) minutes and the minimum sample volume shall be 0.02 dscm (0.71 dscf) for each sample. The arithmetic average of two (2) samples shall constitute one (1) run. Three (3) runs are needed for a compliance test. Samples shall be taken at approximately thirty (30) minute intervals.

401 KAR 59:090. New ethylene producing plants.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which means each waste gas stream of any ethylene producing plant commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation all terms not defined herein shall have the meaning given them in 401 KAR 50:010. "Classification date" means April 9, 1972.

Section 3. Standard for Hydrocarbons. No person shall emit into the atmosphere a waste gas stream from any ethylene producing plant unless the waste gas stream is subjected to 1,300 degrees Fahrenheit for 0.3 seconds or greater in a direct-flame afterburner or equally effective catalytic vapor incinerator. Either device must be equipped with an indicating pyrometer which is positioned in the working area at the operator's eye level.

401 KAR 59:095. New oil-effluent water separators.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced on or after the classification date defined below.

(1) in an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) in any other county and is a part of a major source of volatile organic compounds.

(3) Oil-effluent water separators used exclusively in conjunction with the production of crude oil shall be exempted from this regulation.

Section 2. Definitions. As used in this regulation all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Affected facility" means any oil-effluent water separator which recovers 200 gallons a day or more of any petroleum products from any equipment which processes, refines, stores, or handles hydrocarbons with a Reid vapor pressure of 0.5 psia or greater.

(2) "Oil-effluent water separator" means any tank, box, sump, or other container in which any petroleum or product thereof, floating on or entrained or contained in water entering such tank, box, sump, or other container, is physically separated and removed from such water prior to outfall, drainage, or recovery of such water.

(3) "Floating roof" means a vessel cover consisting of double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and vessel wall.

(4) "Classification date" means April 9, 1972.

(5) "Vapor recovery system" means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from a vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

Section 3. Standard for Hydrocarbons.

An oil-effluent water separator shall be one of the following types of vessels; a vessel equipped with a floating roof, a vessel equipped with a vapor recovery system, or their equivalent. All gauging and sampling devices shall be gas-tight except when gauging and sampling is taking place.

401 KAR 59:100. New loading facilities at bulk gasoline terminals.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility
commenced on or after the classification date defined below,

which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any other county and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Affected facility" means the facilities at a bulk gasoline terminal for loading gasoline into tank trucks, trailers, railroad cars, or other non-marine mobile vessels.

(2) "Bulk gasoline terminal" means a facility for the storage and dispensing of gasoline where incoming gasoline loads are received by pipeline, marine tanker or barge, and where outgoing gasoline loads are transferred by tank trucks, trailers, railroad cars or other non-marine mobile vessels.

(3) "Gasoline" means any petroleum distillate used as a fuel for internal combustion engines and having a Reid vapor pressure of 4.0 pounds per square inch or greater.

(4) "Classification date" means the effective date of this regulation.

Section 3. Standard for Hydrocarbons.

(1) No owner or operator of any loading facility shall load gasoline unless such facility is equipped with a vapor control system which is in good working order, and in operation.

(2) Loading shall be accomplished in such a manner that all displaced vapor and air will be vented only to the vapor collection system. Measures shall be taken to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected.

(3) No owner or operator shall permit the hydrocarbon emissions from the vapor control device to exceed eighty (80) milligrams per liter of gasoline loaded.

(4) No owner or operator shall open tank hatches or allow hatches to be opened at any time during loading operations if bottom-fill is practiced. If top-submerged fill is practiced, the hatch is to be opened the minimum time necessary to install and remove the submerged fill pipe and associated vapor collection equipment.

(5) No owner or operator shall permit there to be any leak in the railroad cars, trailers, tank trucks, pressure relief valves, or associated vapor collection systems during loading. A leak is defined as a reading of ten (10) percent of the lower explosive limit as propane on the portable hydrocarbon detector (explosimeter) with the probe one (1) centimeter from the source.

(6) No owner or operator shall permit gasoline to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.

Section 4. Monitoring and Reporting Requirements. The owner or operator shall conduct such monitoring of operations and submit records as specified by the department.

Section 5. Compliance.

(1) The design of the vapor control system is subject to the approval of the Department.

(2) Kentucky Method 95, filed by reference in 401 KAR 50:015, shall be used to determine compliance with the standard in Section 3.

401 KAR 59:101. New bulk gasoline plants.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which commenced on or after the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any other county and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a bulk plant.

(2) "Bulk gasoline plant" means a facility for the storage and dispensing of gasoline that employs tank trucks, trailers, railroad cars, or other mobile non-marine vessels for both incoming and outgoing gasoline transfer operations.

(3) "Gasoline" means any petroleum distillate having a Reid vapor pressure of 4.0 pounds per square inch or greater used as a fuel for internal combustion engines.

(4) "Bottom fill system" means a system of filling transport vehicle tanks through an opening that is flush with the bottom of the transport vehicle tank.

(5) "Vapor balance system" means a combination of pipes or hoses which create a closed system between the vapor spaces of an unloading tank and a receiving tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded.

(6) "Submerged fill tube system" means a fill tube the discharge of which is entirely submerged when the liquid level is six (6) inches above the bottom of the transport vehicle tank.

(7) "Classification date" means the effective date of this regulation.

(8) "Transport vehicle" means tank trucks, trailers, or railroad tank cars.

Section 3. Standard for Hydrocarbons.

(1) The owner or operator of an affected facility shall install, maintain, and operate:

(a) Stationary storage tank control devices according to the provisions of 401 KAR 59:050 and/or 401 KAR 61:050.

(b) A vapor balance system for:

1. filling of stationary storage tanks from transport vehicle tanks and

2. filling of transport vehicle tanks from stationary storage tanks.

(c) For loading into transport vehicle tanks either:

1. A submerged fill tube system, or

2. A bottom fill system.

(2) The vapor balance system shall be equipped with fittings which are vapor tight and will automatically close upon disconnection so as to prevent the release of organic material.

(3) The cross-sectional area of the vapor return hose must be at least fifty (50) percent of the cross-sectional area of the liquid fill line and free of flow restrictions.

(4) The vapor balance system must be equipped with interlocking devices which prevent transfer of gasoline until the vapor return hose is connected.

(5) Transport vehicle tank hatches shall be closed at all times during loading operations.

(6) There shall be no leaks from the pressure/vacuum relief valves and hatch covers of the stationary storage tanks or transport vehicle tanks during loading.

(7) The pressure relief valves on storage vessels and tank trucks or trailers shall be set to release at no less than 0.7 psig unless a lower setting is required by applicable fire codes.

(8) The owner or operator shall not load gasoline into any transport vehicle or receive gasoline from any transport vehicle which does not have proper fittings for connection of the vapor balance system, nor shall the owner or operator load or receive gasoline unless the vapor balance system is properly connected and in good working order. Except as provided in subsection (9) of this section the fittings on the transport vehicle tanks must be vapor tight and automatically close upon disconnection so as to prevent the release of organic material.

(9) The following shall apply to the loading of a transport vehicle tank by means of a submerged fill tube system:

(a) When inserted into the tank, the submerged fill tube system must form a vapor tight seal with the tank.

(b) Tank hatches are to be opened only for the minimum time necessary to insert or remove the submerged fill tube system.

(10) No owner or operator shall permit gasoline to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.

Section 4. The owner or operator may elect to use an alternate control system if it can be demonstrated to the department's satisfaction that the alternate system will achieve equivalent control efficiency.

401 KAR 59:105. New process gas streams.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which means any process gas stream which:

(1) Is not elsewhere subject to a standard of performance within this chapter with respect to hydrogen sulfide, sulfur dioxide, or carbon monoxide;

(2) Commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Classification date" means the effective date of this regulation;

(2) "Process gas stream" means any gas stream emitted from any process including, but not limited to, petroleum refineries, by-product coke plants, grey iron cupolas, blast furnace, basic oxygen steel furnace and coal conversion plants, except process upset gas as defined in this section.

(3) "Process upset gas" means any gas generated by a process unit as a result of startup, shutdown, upset, or malfunction.

(4) "Process unit" means any segment of the plant in which a specific processing operation is conducted.

Section 3. Standard for Hydrogen Sulfide. No person shall cause, suffer, allow or permit the emission or combustion of hydrogen sulfide in a process gas stream to exceed ten (10) grains per 100 dscf (165 ppm by volume) at zero percent oxygen except that sources whose combined process gas stream emission rate totals less than two (2) tons per day of hydrogen sulfide shall reduce such emissions by eighty-five (85) percent.

Section 4. Standard for Sulfur Dioxide. No person shall cause, suffer, allow or permit the emission of sulfur dioxide in a process gas stream to exceed 28.63 grains per 100 dscf (250 ppm by volume) at zero percent oxygen except that sources whose combined process gas stream emission rate totals less than four (4) tons per day of sulfur dioxide shall reduce such emissions by eighty-five (85) percent.

Section 5. Standard for Carbon Monoxide. No person shall cause, suffer, allow, or permit the emission of carbon monoxide in a process gas stream or a waste gas stream unless the gases are burned at 1,300°F for 0.5 seconds or greater in a direct flame afterburner or equivalent device equipped with an indicating pyrometer which is positioned in the working area at the operator's eye level.

Section 6. Test Methods and Procedures. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Sections 3, 4 and 5 of this regulation shall be conducted according to the following methods, filed by reference in 401 KAR 50:015:

(1) Reference Method 11 for Hydrogen Sulfide. The sample shall be drawn from a point near the centroid of the gas line. The minimum sampling time shall be ten (10) minutes and the minimum sample volume shall be 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two (2) samples shall constitute one (1) run. Samples shall be taken at approximately one (1) hour interval.

(2) Reference Method 6 for Sulfur Dioxide. Reference Method 1 shall be used for velocity traverses and Reference Method 2 for determining velocity and volumetric flow rate. The sampling site for determining sulfur dioxide concentration by Reference Method 6 shall be the same as for determining volumetric flow rate by Reference Method 2. The sampling point in the duct for determining sulfur dioxide concentration by Reference Method 6 shall be at the centroid of the cross section or at a point no closer to the walls than one (1) m (thirty-nine (39) inches) if the cross sectional area is five (5) square meters or more and the centroid is more than one (1) meter from the wall. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. The minimum sampling time shall be ten (10) minutes and

the minimum sampling volume shall be 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two (2) samples shall constitute one (1) run. Three (3) runs will constitute compliance test. Samples shall be taken at approximately one (1) hour intervals.

401 KAR 59:110. New primary copper smelters.

Section 1. Applicability. The provisions of this regulation are applicable to the following affected facilities in primary copper smelters; dryer, roaster, smelting furnace, and copper converter, commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Primary copper smelter" means any installation or any intermediate process engaged in the production of copper from copper sulfide ore concentrates through the use of pyrometallurgical techniques.

(2) "Dryer" means any facility in which a copper sulfide ore concentrate charge is heated in the presence of air to eliminate a portion of the moisture from the charge, provided less than five (5) percent of the sulfur contained in the charge is eliminated in the facility.

(3) "Roaster" means any facility in which a copper sulfide ore concentrate charge is heated in the presence of air to eliminate a significant portion (five (5) percent or more) of the sulfur contained in the charge.

(4) "Calcine" means the solid materials produced by a roaster.

(5) "Smelting" means processing techniques for the melting of a copper sulfide ore concentrate or calcine charge leading to the formation of separate layers of molten slag, molten copper and/or copper matte.

(6) "Classification date" means October 16, 1974.

(7) "Smelting furnace" means any vessel in which the smelting of copper sulfide ore concentrates or calcines is performed and in which the heat necessary for smelting is provided by an electric current, rapid oxidation of a portion of the sulfur contained in the concentrate as it passes through an oxidizing atmosphere, or the combustion of a fossil fuel.

(8) "Copper converter" means any vessel to which copper matte is charged and oxidized to copper.

(9) "Sulfuric acid plant" means any facility producing sulfuric acid by the contact process.

(10) "Fossil fuel" means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

(11) "Reverberatory smelting furnace" means any vessel in which the smelting of copper sulfide ore concentrates or calcines is performed and in which the heat necessary for smelting is provided primarily by combustion of a fossil fuel.

(12) "Total smelter charge" means the weight (dry basis) of all copper sulfides ore concentrates processed at a primary copper smelter, plus the weight of all other solid materials introduced into the roasters and smelting furnaces at a primary copper smelter, except calcine, over a one-month period.

(13) "High level of volatile impurities" means a total smelter charge containing more than 0.2 weight percent arsenic, 0.1 weight percent antimony, 4.5 weight percent lead or 5.5 weight percent zinc, on a dry basis.

Section 3. Standard for Particulate Matter. On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any dryer any gases which contain particulate matter in excess of fifty (50) mg/dscm (0.022 gr/dscf).

Section 4. Standard for Sulfur Dioxide.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this section shall cause to be discharged into the atmosphere from any roaster, smelting furnace or copper converter any gases which containing sulfur dioxide in excess of 0.065 percent by volume, except as provided in subsections (2) and (3) of this section.

(2) Reverberatory smelting furnaces shall be exempted from subsection (1) of this section during periods when the total smelter charge at the primary copper smelter contains a high level of volatile impurities.

(3) A change in the fuel combusted in a reverberatory furnace shall not be considered a modification under this regulation.

Section 5. Standard for Visible Emissions.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any dryer any visible emissions which exhibit greater than twenty (20) percent opacity.

(2) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this section shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in Section 4, any visible emissions which exhibit greater than twenty (20) percent opacity.

Section 6. Monitoring of Operations.

(1) The owner or operator of any primary copper smelter subject to Section 4(2) shall keep a monthly record of the total smelter charge and weight percent (dry basis) of arsenic, antimony, lead and zinc contained in this charge. The analytical methods and procedures employed to determine the weight of the total smelter charge and the weight percent of arsenic, antimony, lead and zinc shall be approved by the Department and shall be accurate to within plus or minus ten (10) percent.

(2) The owner or operator of any primary copper smelter subject to the provisions of this regulation shall install and operate:

(a) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any dryer;

(b) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any roaster, smelting furnace or copper convertor subject to Section 4(1). The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

1. The continuous monitoring system performance evaluation required under 401 KAR 59:005, Section 4(3), shall be completed prior to the initial performance test required under 401 KAR 59:005, Section 2. During the performance evaluation, the span of the continuous monitoring system may be set at a sulfur dioxide concentration of 0.15 percent by volume if necessary to maintain the system output between twenty (20) percent and ninety (90) percent of full scale. Upon completion of the continuous monitoring system performance evaluation, the span of the continuous monitoring system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

2. For the purpose of the continuous monitoring system performance evaluation required under 401 KAR 59:005, Section 4(3), the reference method referred to under the Field Test for Accuracy (Relative) in Performance Specification 2 of Appendix B of 40 CFR 60, filed by reference in 401 KAR 50:015, shall be Reference Method 6. For the performance evaluation each concentration measurement shall be of one

hour duration. The pollutant gas used to prepare the calibration gas mixture required under paragraph 2.1, Performance Specification 2 of Appendix B of 40 CFR 60, and the calibration checks under 401 KAR 59:005, Section 4(4), shall be sulfur dioxide.

(3) Six-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the four (4) consecutive six (6) hour periods of each operating day. Each six (6) hour average shall be determined as the arithmetic mean of the appropriate six (6) continuous one (1) hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under subsection (2) of this section.

(4) For the purpose of reports required under Section 1(9), periods of excess emissions that shall be reported are defined as follows:

(a) Opacity. Any six (6) minute period during which the average opacity, measured by the continuous monitoring system installed under subsection (2) of this section, exceeds the standard under Section 5.

(b) Sulfur dioxide. Any six (6) hour period as described in subsection (3) of this section, during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under subsection (2) of this section exceeds the standard under Section 4.

Section 7. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Sections 3, 4, and 5 of this regulation as follows:

(a) Reference Method 5 for the concentration of particulate matter and the associated moisture content;

(b) Sulfur dioxide concentrations shall be determined using the continuous monitoring system installed in accordance with Section 6(2). One six (6) hour average period shall constitute one run. The monitoring system drift during any run shall not exceed two (2) percent of span.

(2) For Reference Method 5, Reference Method 1 shall be used for selecting the sampling site and the number of traverse points. Reference Method 2 for determining velocity and volumetric flow rate and Reference Method 3 for determining the gas analysis. The sampling time for each run shall be at least sixty (60) minutes and the minimum sampling volume shall be 0.85 dscm (thirty (30) dscf) except that smaller times or volumes, when necessitated by process variables or other factors may be approved by the Department.

401 KAR 59:115. New primary zinc smelters.

Section 1. Applicability. The provisions of this regulation are applicable to the following affected facilities in primary zinc smelters; roaster and sintering machine, which commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Primary zinc smelters" means any installation engaged in the production, or any intermediate process in the production, of zinc or zinc oxide from zinc sulfide ore concentrates through the use of pyrometallurgical techniques.

(2) "Roaster" means any facility in which a zinc sulfide ore concentrate charge is heated in the presence of air to eliminate a significant portion (more than ten (10) percent) of the sulfur contained in the charge.

(3) "Classification date" means October 16, 1974.

(4) "Sintering machine" means any furnace in which calcines are heated in the presence of air to agglomerate the calcines into a hard porous mass called "sinter."

(5) "Sulfuric acid plant" means any facility producing sulfuric acid by the contact process.

Section 3. Standard for Particulate Matter. On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any sintering machine any gases which contain particulate matter in excess of fifty (50) mg/dscf (0.022 gr/dscf).

Section 4. Standard for Sulfur Dioxide.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any roaster any gases which contain sulfur dioxide in excess of 0.065 percent by volume.

(2) Any sintering machine which eliminates more than ten (10) percent of the sulfur initially contained in the zinc sulfide ore concentrates will be considered as a roaster under subsection (1) of this section.

Section 5. Standard for Visible Emissions.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any sintering machine any visible emissions which exhibit greater than twenty (20) percent opacity.

(2) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in Section 4 any visible emissions which exhibit greater than twenty (20) percent opacity.

Section 6. Monitoring of Operations.

(1) The owner or operator of any primary zinc smelter subject to the provisions of this regulation shall install and operate:

(a) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any sintering machine. The span of this system shall be set at eighty (80) to 100 percent opacity;

(b) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any roaster subject to Section 4. The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

1. The continuous monitoring system performance evaluation required under 401 KAR 59:005, Section 4(3), shall be completed prior to the initial performance test required under 401 KAR 59:005, Section 2. During the performance evaluation, the span of the continuous monitoring system may be set at a sulfur dioxide concentration of 0.15 percent by volume if necessary to maintain the system output between twenty (20) percent and ninety (90) percent of full scale. Upon completion of the continuous monitoring system performance evaluation, the span of the continuous monitoring system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

2. For the purpose of the continuous monitoring system performance evaluation required under 401 KAR 59:005, Section 4(3), the reference method referred to under the Field Test for Accuracy (Relative) in Performance Specification 2 of Appendix B of 40 CFR 60, filed by reference in 401 KAR 50:015, shall be Reference Method 6. For the performance evaluation, each concentration measurement shall be of one (1) hour duration. The pollutant gas used to prepare the calibration gas mixtures required under paragraph 2.1, Performance Specification 2 of Appendix B of 40 CFR 60, and for calibration checks under 401 KAR 59:005, Section 4(4), shall be sulfur dioxide.

(2) Two-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the twelve (12) consecutive two (2) hour periods of each operating day. Each two-hour average shall be determined as the arithmetic mean of the appropriate two (2) continuous one-hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under subsection (1) of this section.

(3) For the purpose of reports required under 401 KAR 59:005, Section 3(3), periods of excess emissions that shall be reported are defined as follows:

(a) Opacity. Any six-minute period during which the average opacity, as measured by the continuous monitoring system installed under subsection (1) of this section, exceeds the standard under Section 5(1);

(b) Sulfur dioxide. Any two (2) hour period, as described in subsection (2) of this section, during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under subsection (1) of this section, exceeds the standard under Section 4.

Section 7. Test Methods and Procedures. The reference methods in Appendix A to 40 CFR 60, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Sections 3, 4, and 5 as follows:

(1) Reference Method 5 for the concentration of particulate matter and the associated moisture content;

(2) Sulfur dioxide concentrations shall be determined using the continuous monitoring system installed in accordance with Section 6(1). One two (2) hour average period shall constitute one (1) run;

(3) For Reference Method 5, Reference Method 1 shall be used for selecting the sampling site and the number of traverse points, Reference Method 2 for determining velocity and volumetric flow rate, and Reference Method 3 for determining the gas analysis. The sampling time for each run shall be at least sixty (60) minutes and the minimum sampling volume shall be 0.85 dscm (thirty (30) dscf) except that smaller times or volumes, when necessitated by process variables or other factors, may be approved by the Department.

401 KAR 59:120. New primary lead smelters.

Section 1. Applicability. The provisions of this regulation are applicable to the following affected facilities in primary lead smelters: sintering machine, sintering machine discharge end, blast furnace, dross reverberatory furnace, electric smelting furnace, and converter, which commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Primary lead smelter" means any installation of any intermediate process engaged in the production of lead from lead sulfide ore concentrates through the use of pyrometallurgical techniques.

(2) "Sintering machine" means any furnace in which a lead sulfide ore concentrate charge is heated in the presence of air to eliminate sulfur contained in the charge and to agglomerate the charge into a hard porous mass called "sinter."

(3) "Sinter bed" means the lead sulfur ore concentrate charge within a sintering machine.

(4) "Sintering machine discharge end" means any apparatus which receives sinter as it is discharged from the conveying grate of a sintering machine.

(5) "Blast furnace" means any reduction furnace to which sinter is charged and which forms separate layers of molten slag and lead bullion.

(6) "Dross reverberatory furnace" means any furnace used for the removal or refining of impurities from lead bullion.

(7) "Electric smelting furnace" means any furnace in which the heat necessary for smelting of the lead sulfide ore concentrate charge is generated by passing an electric current through a portion of the molten mass in the furnace.

(8) "Converter" means any vessel to which lead concentrate or bullion is charged and refined.

(9) "Sulfuric acid plant" means any facility producing sulfuric acid by the contact process.

(10) "Classification date" means October 16, 1974.

Section 3. Standard for Particulate Matter. On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end any gases which contain particulate matter in excess of fifty-nine (59) mg/dscm (0.022 gr/dscf).

Section 4. Standard for Sulfur Dioxide. On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any sintering machine electric smelting furnace, or converter gases which contain sulfur dioxide in excess of 0.065 percent by volume.

Section 5. Standard for Visible Emissions.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulaton shall cause to be discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end any visible emissions which exhibit greater than twenty (20) percent opacity.

(2) On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in Section 4, any visible emissions which exhibit greater than twenty (20) percent opacity.

Section 6. Monitoring of Operations. The owner or operator of any primary lead smelter subject to the provisions of this regulation shall install and operate:

(1) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any blast furnace or sintering machine discharge end. The span of this system shall be set at eighty (80) to 100 percent opacity;

(2) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any sintering machine, electric furnace, or converter subject to Section 4. The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume;

(3) The continuous monitoring system performance evaluation required under 401 KAR 59:005, Section 4(3), shall be completed prior to the initial performance test required under 401 KAR 59:005. During the performance evaluation, the span of the continuous monitoring system may be set at a sulfur dioxide concentration of 0.15 percent by volume if necessary to maintain the system output between twenty (20) percent and ninety (90) percent of full scale. Upon completion of the continuous monitoring system performance evaluation, the span of the continuous monitoring system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

Section 7. Test Methods and Procedures.

(1) The reference methods in Appendix A to 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Sections 3, 4, and 5 as follows:

(a) Reference Method 5 for the concentration of particulate matter and the associated moisture content;

(b) Sulfur dioxide concentrations shall be determined using the continuous monitoring system installed in accordance with Section 6(1). One (1) two (2) hour average period shall constitute one (1) run.

(2) For Reference Method 5, Reference Method 1 shall be used for selecting the sampling site and the number of traverse points, Reference Method 2 for determining velocity and volumetric flow rate, and Reference Method 3 for determining the gas analysis. The sampling time for each run shall be at least sixty (60) minutes and the minimum sampling volume shall be 0.85 dscm (thirty (30) dscf) except that smaller times or volumes, when necessitated by process variables or other factors, may be approved by the Department.

401 KAR 59:125. New primary aluminum reduction plants.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which means each potroom group and anode bake plant (within a primary aluminum reduction plant) commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Primary aluminum reduction plant" means any source manufacturing aluminum by electrolytic reduction.

(2) "Anode bake plant" means an affected facility which produces carbon anodes for use in a primary aluminum reduction plant.

(3) "Potroom" means a building unit which houses a group of electrolytic cells in which aluminum is produced.

(4) "Potroom group" means an uncontrolled potroom, a potroom which is controlled individually, or a group of potrooms ducted to the same control system.

(5) "Roof monitor" means that portion of the roof of a potroom where gases not captured at the cell exit from the potroom.

(6) "Aluminum equivalent" means an amount of aluminum which can be produced from a ton of anodes produced by an anode bake plant.

(7) "Total fluorides" means elemental fluorine and all fluorides compounds, as measured by reference methods specified in Section 6 or equivalent or alternative methods.

(8) "Primary control system" means an air pollution control system designed to remove gaseous and particulate fluorides from exhaust gases which are captured at the cell.

(9) "Prebake plant" means any primary aluminum reduction plant whose electrolytic reduction cells utilize carbon anodes manufactured in an anode bake plant.

(10) "Vertical stud soderberg plant" means any primary aluminum reduction plant whose electrolytic reduction cells utilize an anode consisting of a rectangular container, open at the top and bottom, suspended above the cell, into which carbon paste is fed at intervals, becoming baked by the heat of the cell as it gradually descends into the container. Current carrying studs project vertically into the anode through the unbaked paste and into the baked portion of the anode.

(11) "Horizontal stud soderberg plant" means any primary aluminum reduction plant whose electrolytic reduction cells utilize an anode consisting of a rectangular container open at the top and bottom, suspended above the cell, into which carbon paste is fed at intervals becoming baked by the heat of the cell as it gradually descends into the container. Rows of studs in channel assemblies project laterally into the paste and move with the anode.

(12) "Secondary control system" means an air pollution control system designed to remove gaseous and particulate fluorides which escape capture by the primary control system.

(13) "Applicable affected facility" means each potroom group and anode bake plant within a primary aluminum reduction plant.

(14) "Classification date" means October 23, 1974.

Section 3. Standard for Visible Emissions. On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere:

(1) From any potroom group any gases which exhibit ten (10) percent opacity or greater;

(2) From any anode bake plant any gases which exhibit twenty (20) percent opacity and greater.

Section 4. Standard for Fluorides. On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere gases which contain total fluorides in excess of:

(1) One (1) kg/metric ton (two (2) lb/ton) of aluminum produced for vertical stud soderberg and horizontal stud soderberg plants;

(2) 0.95 kg/metric ton (1.9 lb/ton) of aluminum produced for potroom groups at prebaked plants; and

(3) 0.05 kg/metric ton (0.1 lb/ton) of aluminum equivalent for anode bake plants.

Section 5. Monitoring of Operations.

(1) The owner or operator of any applicable affected facility subject to the provisions of this regulation shall install, calibrate, maintain, and operate monitoring devices which can be used to determine daily the weight of the aluminum and anode produced. The weighing devices shall have an accuracy of ± five (5) percent over their operating range.

(2) The owner or operator of any applicable affected facility shall maintain a record of daily production rates of aluminum and anodes, raw material feed rates, and cell or potline voltages.

(3) The owner or operator of any affected facility shall install, use, and maintain ambient air monitoring equipment in accordance with such methods as the Department shall prescribe; establish and maintain records of same; and make periodic emission reports at intervals prescribed by the Department.

Section 6. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Section 4 as follows:

(a) For sampling emissions from stacks:

1. Reference Method 13A or 13B for the concentration of total fluoride and the associated moisture content;

2. Reference Method 1 for sample and velocity traverses;

3. Reference Method 2 for velocity and volumetric flow rate; and

4. Reference Method 3 for gas analysis.

(b) For sampling emissions from roof monitors not employing stacks or pollutant collection systems:

1. Reference Method 14 for the concentration of total fluorides and associated moisture content;

2. Reference Method 1 for sample and velocity traverses;

3. Reference Method 2 and Reference Method 14 for velocity and volumetric flow rate; and

4. Reference Method 3 for gas analysis.

(c) For sampling emissions from roof monitors not employing stacks but equipped with pollutant collection systems the procedures under 401 KAR 50:045 shall be followed.

(2) For Reference Method 13A or 13B, the sampling time for each run shall be at least eight (8) hours for any potroom sample and at least four (4) hours for any anode bake plant sample, and the minimum sample volume shall be 6.8 dscm (240 dscf) for any potroom sample and 3.4 dscm (120 dscf) for any anode bake plant sample except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Department.

(3) The air pollution control system for each affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined using applicable methods specified under subsection (1) of this section.

(4) The rate of aluminum production shall be determined as follows:

(a) Determine the weight of the aluminum in metric tons produced during a period from the last tap before a run starts until the first tap after the run ends using a monitoring device which meets the requirements of Section 5(4) of this regulation;

(b) Divide the weight of aluminum produced by the length of the period in hours.

(5) For anode bake plants, the aluminum equivalent for anodes produced shall be determined as follows:

(a) Determine the average weight (metric tons) of anodes produced in the anode bake plant during a representative oven cycle using a monitoring device which meets the requirements of Section 5(1);

(b) Determine the average rate of anode production by dividing the total weight of anodes produced during the representative oven cycle by the length of the cycle in hours;

(c) Calculate the aluminum equivalent for anodes produced by multiplying the average rate of anode production by two. (Note: an owner or operator may establish a different multiplication factor by submitting production records of the tons of aluminum produced and the concurrent tons of anode consumed by potrooms.);

(d) The owner or operator shall submit production records of the tons of aluminum produced and the concurrent tons of anodes consumed by potrooms during a representative production day. A second aluminum equivalent for anodes produced will be calculated by dividing the tons of aluminum produced by the concurrent tons of anode consumed. The smaller of the aluminum equivalents for anodes produced, as calculated under this paragraph and paragraph (c) of this subsection, shall be used to determine the lbs fluorides/tons of aluminum equivalent for anode bake plants.

(6) For each run, potroom group emissions expressed in kg/metric ton of aluminum produced shall be determined using the equation in Appendix A of this regulation.

(7) For each run, as applicable, anode bake plant emissions expressed in kg/metric ton of aluminum equivalent shall be determined using the equation in Appendix B of this regulation.

APPENDIX A TO 401 KAR 59:125
EQUATION FOR POTROOM GROUP EMISSIONS

$$E_p = \frac{(CQ)_1 10^6 + (CQ)_2 10^{-6}}{M}$$

Where:

E_p = Potroom group emissions of total fluorides in kg/metric ton of aluminum produced.

C = Concentration of total fluorides in mg/dscm as determined by Reference Method 13A or 13B, or Reference Method 14 as applicable.

Q = Volumetric flow rate of the effluent gas stream in dscm/hour as determined by Reference Method 2 and/or Reference Method 14, as applicable.

10^{-6} = Conversion factor for mg to kg.

M = Rate of aluminum production in metric ton/hour as determined by Section 6(4) of this regulation.

$(CQ)_2$ = Product of C and Q for measurements of primary control system effluent gas streams.

$(CQ)_1$ = Product of C and Q for measurements of secondary control system or roof monitor effluent gas stream.

APPENDIX B TO 401 KAR 59:125
EQUATION FOR ANODE BAKE PLANT EMISSIONS

$$E_a = \frac{(CQ)\ 10^{-6}}{M_b}$$

Where:

E_a = Anode bake plant emissions of total fluorides in kg/metric ton of aluminum equivalent.

C = Concentration of total fluorides in mg/dscm as determined by Reference Method 13A or 13B.

Q = Volumetric flow rate of the effluent gas stream in dscm/hour as determined by Reference Method 2.

10^{-6} = Conversion factor from mg to kg.

M_b = Aluminum equivalent for anodes produced by anode bake plants in metric ton/hour as determined by Section 6(5).

401 KAR 59:130. Phosphate fertilizer industry; new wet process phosphoric acid plants.

Section 1. Applicability. The affected facility to which the provisions of this regulation apply is each wet-process phosphoric acid plant. For the purpose of this regulation, the affected facility includes any combination of: reactors, filters, evaporators, and hotwells, commenced on or after the classification date.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Wet-process phosphoric acid plant" means any facility manfacturing phosphoric acid by reacting phosphate rock and acid.

(2) "Classification date" means October 22, 1974.

(3) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in Section 5, or equivalent or alternative methods.

(4) "Equivalent phosphorus pentoxide feed" means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

Section 3. Standard for Fluorides. On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 10.0 g/metric ton of equivalent phosphorus pentoxide feed (0.020 lb/ton).

Section 4. Monitoring of Operations.

(1) The owner or operator of any wet-process phosphoric acid plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate a monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The monitoring device shall have an accuracy of ± five (5) percent over its operating range.

(2) The owner or operator of any wet-process phosphoric acid plant shall maintain a daily record of equivalent phosphorus pentoxide feed by first determining the total mass rate in metric ton/hour flow rate which meets the requirements of subsection (1) of this section and then by proceeding according to Section 5(4)(a).

(3) The owner or operator of any wet-process phosphoric acid plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ± five (5) percent over its operating range.

Section 5. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided in 401 KAR 50:045, shall be used to determine compliance with the standard prescribed in Section 3 as follows:

(a) Reference Method 13A or 13B for the concentration of total fluorides and the associated moisture content;

(b) Reference Method 1 for sampling and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) For Reference Method 13A or 13B, the sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 0.85 dscm (thirty (30) dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Department.

(3) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(4) Equivalent phosphorus pentoxide feed shall be determined as follows:

(a) Determine the total mass rate in metric ton/hour of phosphorus-bearing feed during each run using a flow monitoring device meeting the requirements of Section 4(1);

(b) Calculate the equivalent phosphorus pentoxide feed by multiplying the percentage of phosphorus pentoxide content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9), times the total mass rate of phosphorus-bearing feed. AOAC Method 9 is published in the "Official Methods of Analysis" of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12, filed by reference in 401 KAR 50:015. Other methods may be approved by the Department.

(5) For each run, emissions expressed in g/metric ton of the equivalent phosphorus pentoxide feed shall be determined using the equation given in Appendix A of this regulation.

APPENDIX A TO 401 KAR 59:130
DETERMINATION OF EMISSIONS OF TOTAL FLUORIDES

$$E = \frac{C\ Q\ (10^{-3})}{M}$$

Where:

E = Emissions of total fluorides in g/metric ton of equivalent phosphorus pentoxide feed.

C = Concentration of total fluorides in mg/dscm as determined by Reference Method 13A or 13B.

Q = Volumetric flow rate of the effluent gas stream in dscm/hour as determined by Reference Method 2.

10^{-3} = Conversion factor for mg to g.

M = Equivalent phosphorus pentoxide feed in metric ton/hour as determined by Section 5(4).

401 KAR 59:135. Phosphate fertilizer industry; new superphosphoric acid plants.

Section 1. Applicability. The affected facility to which the provisions of this regulation apply is each superphosphoric acid plant. For the purpose of this regulation the affected facility includes any combination of: evaporators, hot-wells, acid sumps, and cooling tanks, commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Superphosphoric acid plant" means any facility which concentrates wet-process phosphoric acid to sixty-six (66) percent or greater phosphorus pentoxide content by weight for eventual consumption as a fertilizer.

(2) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in Section 5, or equivalent or alternative methods.

(3) "Equivalent phosphorus pentoxide feed" means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

(4) "Classification date" means October 22, 1974.

Section 3. Standard for Fluorides. On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 5.0 g/metric ton of equivalent phosphorus pentoxide feed (0.010 lb/ton).

Section 4. Monitoring of Operations.

(1) The owner or operator of any superphosphoric acid plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ± five (5) percent over its operating range.

(2) The owner or operator of any superphosphoric acid plant shall maintain a daily record of equivalent phosphorus pentoxide feed by first determining the total mass rate in metric tons/hour of phosphorus-bearing feed using a flow monitoring device meeting the requirements of subsection (1) of this section and then by proceeding according to Section 5(4).

(3) The owner or operator of any superphosphoric acid plant subject to the provisions of this regulation shall install, calibrate, maintain and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ± five (5) percent over its operating range.

Section 5. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided in 401 KAR 50:045 shall be used to determine compliance with the standard prescribed in Section 3 as follows:

(a) Reference Method 13A or 13B for the concentration of total fluorides and the associated moisture content;

(b) Reference Method 1 for sampling and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) For Reference Method 13A or 13B, the sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be at least 0.85 dscm (thirty (30) dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors may be approved by the Department.

(3) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(4) Equivalent phosphorus pentoxide feed shall be determined as follows:

(a) Determine the total mass rate in metric tons/hour of phosphorus-bearing feed during each run using a flow monitoring device meeting the requirements of Section 4(1);

(b) Calculate the equivalent phosphorus pentoxide feed by multiplying the percentage phosphorus pentoxide content, as measured by the spectrophotometric molybdovanabophosphate method (AOAC Method 9), times the total mass rate of phosphorus-bearing feed. AOAC Method 9 is published in the "Official Methods of Analysis" of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12, filed by reference in 401 KAR 50:015. Other methods may be approved by the Department.

(5) For each run, emissions expressed in g/metric ton of equivalent phosphorus pentoxide feed, shall be determined using the equation given in Appendix A of this regulation.

APPENDIX A TO 401 KAR 59:135
DETERMINATION OF EMISSIONS OF TOTAL FLUORIDES

$$E = \frac{C\ Q\ (10^{-3})}{M}$$

Where:

E = Emissions of total fluorides in g/metric ton of equivalent phosphorus pentoxide feed.

C = Concentration of total fluorides in mg/dscm as determined by Reference Method 13A or 13B.

Q = Volumetric flow rate of the effluent gas stream in dscm/hour as determined by Reference Method 2.

10^{-3} = Equivalent phosphorus pentoxide feed in metric ton/hour as determined by Section 5(4).

401 KAR 59:140. Phosphate fertilizer industry; new diammonium phosphate plants.

Section 1. Applicability. The affected facility to which the provisions of this regulation apply is each granular diammonium phosphate plant. For the purpose of this regulation, the affected facility includes any combination of: reactors, granulators, dryers, coolers, screens and mills, commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Granular diammonium phosphate plant" means any plant manufacturing granular diammonium phosphate by reacting phosphoric acid with ammonia.

(2) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in Section 5, or equivalent or alternative methods.

(3) "Equivalent phosphorus pentoxide feed" means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

(4) "Classification date" means October 22, 1974.

Section 3. Standard for Fluorides. On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this section shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of thirty (30) g/metric ton of equivalent phosphorus pentoxide feed (0.060 lb/ton).

Section 4. Monitoring of Operations.

(1) The owner or operator of any granular diammonium phosphate plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ± five (5) percent over its operating range.

(2) The owner or operator of any granular diammonium phosphate plant shall maintain a daily record of equivalent phosphorus pentoxide feed by first determining the total mass rate in metric ton/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of subsection (1) of this section and then by proceeding according to Section 5(4)(b).

(3) The owner or operator of any granular diammonium phosphate plant subject to the provisions of this regulation shall install, calibrate, maintain and operate a monitoring device which continuously measures and permanently records the total pressure drop across the scrubbing system. The monitoring device shall have an accuracy of ± five (5) percent over its operating range.

Section 5. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standard prescribed in Section 3 as follows:

(a) Reference Method 13A or 13B for the concentration of total fluorides and the associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) For Method 13A or 13B, the sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be at least 0.85 dscm (thirty (30) dscf) except that shorter sampling times or smaller volumes when necessitated by process variables or other factors, may be approved by the Department.

(3) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(4) Equivalent phosphorus pentoxide feed shall be determined as follows:

(a) Determine the total mass rate in metric ton/hr of phosphorus-bearing feed during each run using a flow monitoring device meeting the requirements of Section 4(1).

(b) Calculate the equivalent phosphorus pentoxide feed by multiplying the percentage phosphorus pentoxide content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9), times the total mass rate of phosphorus-bearing feed. AOAC Method 9 is published in the "Official Methods of Analysis" of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12, filed by reference in 401 KAR 50:015. Other methods may be approved by the Department.

(5) For each run, emissions expressed in g/metric ton of equivalent phosphorus pentoxide feed shall be determined using the equation in Appendix A to this regulation.

Appendix A to 401 KAR 59:140

Equation for Equivalent Phosphorus Pentoxide Feed Emissions

$$E = \frac{(CQ)\ 10^{-3}}{M}$$

where

E = emissions of total fluorides in g/metric ton of equivalent phosphorus pentoxide.

C = concentration of total fluorides in mg/dscm as determined by Reference Method 13A or 13B.

Q = volumetric flow rate of the effluent gas stream in dscm/hr as determined by Reference Method 2.

10^{-3} = conversion factor for mg to g.

M = equivalent phosphorus pentoxide feed in metric tons/hr as determined by Section 5(4)(b).

401 KAR 59:145. Phosphate fertilizer industry; new triple superphosphate plants.

Section 1. Applicability. The affected facility to which the provisions of this regulation apply is each triple superphosphate plant. For the purpose of this regulation, the affected facility includes any combination of: mixers, curing belts (dens), reactors, granulators, dryers, cookers, screens, mills and facilities which store run-of-pile triple superphosphate, commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Classification date" means October 22, 1974.

(2) "Triple superphosphate plant" means any facility manufacturing triple superphosphate by reacting phosphate rock with phosphoric acid. A run-of-pile triple superphosphate plant includes curing and storing.

(3) "Run-of-pile triple superphosphate" means any triple superphosphate that has not been processed in a granulator and is composed of particules at least twenty-five (25) percent by weight of which (when not caked) will pass through a sixteen (16) mesh screen.

(4) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in Section 5, or equivalent or alternative methods.

(5) "Equivalent phosphorus pentoxide feed" means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

Section 3. Standard for Fluorides. On and after the date on which the performance test required to be conducted by 401 KAR 59:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 100 g/metric ton of equivalent phosphorus pentoxide feed (0.20 lb/ton).

Section 4. Monitoring of Operations.

(1) The owner or operator of any triple superphosphate plant subject to the provisions of this regulation shall install, calibrate, maintain and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ± five (5) percent over its operating range.

(2) The owner or operator of any triple superphosphate plant shall maintain a daily record of equivalent phosphorus pentoxide feed by first determining the total mass rate in metric tons/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of subsection (1) of this section and then by proceeding according to Section 5(4)(b).

(3) The owner or operator of any triple superphosphate plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ± five (5) percent over its operating range.

Section 5. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standard prescribed in Section 3 as follows:

(a) Reference Method 13A or 13B for the concentration of total fluorides and the associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) For Reference Method 13A or 13B, the sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be at least 0.85 dscm (thirty (30) dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Department.

(3) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(4) Equivalent phosphorus pentoxide feed shall be determined as follows:

(a) Determine the total mass rate in metric tons/hr of phosphorus-bearing feed during each run using a flow monitoring device meeting the requirements of Section 4(1).

(b) Calculate the equivalent phosphorus pentoxide feed by multiplying the percentage phosphorus pentoxide content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9), times the total mass rate of phosphorus-bearing feed. AOAC Method 9 is published in the "Official Methods of Analysis" of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12, filed by reference in 401 KAR 50:015. Other methods may be approved by the Department.

(5) For each run, emissions expressed in g/metric ton of equivalent phosphorus pentoxide feed shall be determined using the equation in Appendix A of this regulation.

APPENDIX A TO 401 KAR 59:145

Determination of Emissions of Total Fluorides

$$E = \frac{CQ\,(10^{-3})}{M}$$

Where:

E = Emissions of total fluorides in g/metric ton of equivalent phosphorus pentoxide feed.

C = Concentration of total fluorides in mg/dscm as determined by Reference Method 13A or 13B.

Q = Volumetric flow rate of the effluent gas stream in dscm/hr as determined by Reference Method 2.

10^{-3} = Conversion factor for mg to g.

M = Equivalent phosphorus pentoxide feed in metric tons/hr as determined by Section 5(4).

401 KAR 59:150. Phosphate fertilizer industry; new granular triple superphosphate storage facilities.

Section 1. Applicability. The affected facility to which the provisions of this regulation apply is each granular triple superphosphate storage facility. For the purpose of this regulation, the affected facility includes any combination of: storage or curing piles, conveyors, elevators, screens and mills, commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Granular triple superphosphate storage facility" means any facility curing or storing granular triple superphosphate.

(2) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in Section 5, or equivalent or alternative methods.

(3) "Classification date" means October 22, 1974.

(4) "Equivalent phosphorus pentoxide stored" means the quantity of phosphorus, expressed as phosphorus pentoxide, being cured or stored in the affected facility.

(5) "Fresh granular triple superphosphate" means granular triple superphosphate produced no more than ten (10) days prior to the date of the performance test.

Section 3. Standard for Fluorides. On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 0.25 g/hr/metric ton of equivalent phosphorus pentoxide stored (.0005 lb/hr/ton of equivalent phosphorus pentoxide stored).

Section 4. Monitoring of Operations.

(1) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this regulation shall maintain an accurate account of triple superphosphate in storage to permit the determination of the amount of equivalent phosphorus pentoxide stored.

(2) The owner or operator of any granular triple superphosphate storage facility shall maintain a daily record of total equivalent phosphorus pentoxide stored by multiplying the percentage phosphorus pentoxide content, as determined by Section 5(6)(b) times the total mass of granular triple superphosphate stored.

(3) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this regulation shall install, calibrate, maintain and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ± five (5) percent over its operating range.

Section 5. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standard prescribed in Section 3 as follows:

(a) Reference Method 13A or 13B for the concentration of total fluorides and the associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) For Reference Method 13A or 13B, the sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be at least 0.85 dscm (30 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Department.

(3) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(4) Except as provided under subsection (5) of this section, all performance tests on granular triple superphosphate storage facilities shall be conducted only when the following quantities of product are being cured or stored in the facility:

(a) Total granular triple superphosphate at least ten (10) percent of the amount of triple superphosphate in the building;

(b) Fresh granular triple superphosphate at least twenty (20) percent of the amount of triple superphosphate in the building.

(5) If the provisions set forth in subsection (4)(b) of this section exceed production capabilities for fresh granular triple superphosphate, the owner or operator shall have at least five (5) days maximum production of fresh granular triple superphosphate in the building during a performance test.

(6) Equivalent phosphorus pentoxide stored shall be determined as follows:

(a) Determine the total mass stored during each run using an accountability system meeting the requirements of Section 4(1).

(b) Calculate the equivalent phosphorus pentoxide stored by multiplying the percentage phosphorus pentoxide content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9) times the total mass stored. AOAC Method 9 is published in the "Official Methods of Analysis" of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12, filed by reference in 401 KAR 50:015. Other methods may be approved by the Department.

(7) For each run, emissions expressed in g/hr/metric ton of equivalent phosphorus pentoxide stored shall be determined using the equation given in Appendix A of this regulation.

APPENDIX A TO 401 KAR 59:150
DETERMINATION OF EMISSIONS OF TOTAL FLUORIDES

$$E = \frac{CQ\ (10^{-3})}{M}$$

Where:

E = Emissions of total fluorides in g/metric ton of equivalent phosphorus pentoxide feed.

C = Concentration of total fluorides in mg/dscm as determined by Reference Method 13A or 13B.

Q = Volumetric flow rate of the effluent gas stream in dscm/hr as determined by Reference Method 2.

10^{-3} = Conversion factor for mg to g.

M = Equivalent phosphorus pentoxide feed in metric ton/hr as determined by Section 5(4).

401 KAR 59:155. New coal preparation plants.

Section 1. Applicability. The provisions of this regulation are applicable to any of the following affected facilities in coal preparation plants which process more than 200 tons per day: thermal dryers, pneumatic coal-cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems, commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Coal preparation plant" means any facility (excluding underground mining operations) which prepares coal by one or more of the following processes: breaking, crushing, screening, wet or dry cleaning, and thermal drying.

(2) "Classification date" means October 24, 1974.

(3) "Bituminous coal" means solid fossil fuel classified as bituminous coal by A.S.T.M. Designation D-388-66(72), filed by reference in 401 KAR 50:015.

(4) "Coal" means all solid fossil fuels classified as anthracite, bituminous, subbituminous, or lignite by A.S.T.M. Designation D-388-66(72).

(5) "Cyclonic flow" means a spiraling movement of exhaust gases within a duct or stack.

(6) "Thermal dryer" means any facility in which the moisture content of bituminous coal is reduced by contact with a heated gas stream which is exhausted to the atmosphere.

(7) "Pneumatic coal-cleaning equipment" means any facility which classifies bituminous coal by size or separates bituminous coal from refuse by application of air stream(s).

(8) "Coal processing and conveying equipment" means any machinery used to reduce the size of coal or to separate coal from refuse, and the equipment used to convey coal to or remove coal and refuse from the machinery. This includes, but is not limited to, breakers, crushers, screens, and conveyor belts.

(9) "Coal storage system" means any facility used to store coal including open storage piles.

(10) "Transfer and loading system" means any facility used to transfer and load coal for shipment.

Section 3. Standards for Particulate Matter.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, an owner or operator subject to the provisions of this regulation shall not cause to be discharged into the atmosphere from any thermal dryer, gases which:

(a) Contain particulate matter in excess of 0.070 g/dscm (0.031 gr/dscf).

(b) Exhibit twenty (20) percent opacity or greater.

(2) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, an owner or operator subject to the provisions of this regulation shall not cause to be discharged into the atmosphere from any pneumatic coal cleaning equipment, gases which:

(a) Contain particulate matter in excess of 0.040 g/dscm (0.018 gr/dscf).

(b) Exhibit ten (10) percent opacity or greater.

(3) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, an owner or operator subject to the provisions of this regulation shall not cause to be discharged into the atmosphere from any coal processing and/or conveying equipment, coal storage system, or coal transfer and/or loading system processing coal gases which exhibit twenty (20) percent opacity or greater.

Section 4. Monitoring of Operations.

(1) The owner or operator of any thermal dryer shall install, calibrate, maintain, and continuously operate monitoring devices as follows:

(a) A monitoring device for the measurement of the temperature of the gas stream at the exit of the thermal dryer on a continuous basis. The monitoring device is to be certified by the manufacturer to be accurate within ± three (3) ° Fahrenheit.

(b) For affected facilities that use venturi scrubber emissin control equipment:

1. A monitoring device for the continuous measurement of the pressure loss through the venturi construction of the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± one (1) inch water gage.

2. A monitoring device for the continuous measurement of the water supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± five (5) percent of design water supply pressure. The pressure sensor or tap must be located close to the water discharge point. The Department may be consulted for approval of alternative locations.

(2) All monitoring devices under subsection (1) of this section are to be recalibrated annually in accordance with procedures under 401 KAR 59:005, Section 4(2).

Section 5. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60 filed by reference in 401 KAR 50:015, except as provided in 401 KAR 50:045 and in Section 3, are to be used to determine compliance with the standards prescribed in Section 3 as follows:

(a) Reference Method 5 for the concentration of particulate matter and associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; [and]

(d) Reference Method 3 for gas analysis; and [.]

(e) Reference Method 9 for visible emissions.

(2) For Reference Method 5, the sampling time for each run is at least sixty (60) minutes and the minumum sample volume is 0.85 dscm (thirty (30) dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Department. Sampling is not to be started until thirty (30) minutes after startup and is to be terminated before shutdown procedures commence. The owner or operator of the affected facility shall eliminate cyclonic flow during performance tests in a manner acceptable to the Department.

(3) The owner or operator shall construct the facility so that particulate emissions from thermal dryers or pneumatic coal cleaning equipment can be accurately determined by applicable test methods and procedures under subsection (1) of this section.

401 KAR 59:160. New ferroalloy production facilities.

Section 1. Applicability. The provisions of this regulation are applicable to the following affected facilities: electric submerged arc furnaces which produce silicon metal, ferrosilicon, calcium silicon, silicomanganese zirconium, ferrochrome silicon, silvery iron, high-carbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, ferromanganese silicon, or calcium carbide; and dust-handling equipment, commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Electric submerged arc furnace" means any furnace wherein electrical energy is converted to heat energy by transmission of current between electrodes partially submerged in the furnace charge.

(2) "Furnace charge" means any material introduced into the electric submerged arc furnace and may consist of, but is not limited to, ores, slag, carbonaceous material, and limestone.

(3) "Product change" means any change in the composition of the furnace charge that would cause the electric submerged arc furnace to become subject to a different mass standard applicable under this regulation.

(4) "Slag" means the more or less completely fused and vitrified matter separated during the reduction of metal from its ore.

(5) "Tapping" means the removal of slag or product from the electric submerged arc furnace under normal operating conditions such as removal of metal under normal pressure and movement by gravity down the spout into the ladle.

(6) "Tapping period" means the time duration from initiation of the process of opening the tap hole until plugging of the tap hole is complete.

(7) "Furnace cycle" means the time period from completion of a furnace product tap to the completion of the next consecutive product tap.

(8) "Tapping station" means that general area where molten product or slag is removed from the electric submerged arc furnace.

(9) "Blowing tap" means any tap in which an evolution of gas forces or projects jets of flame or metal sparks beyond the ladle, runner or collection hood.

(10) "Furnace power input" means the resistive electrical power consumption of an electric submerged arc furnace as measured in kilowatts.

(11) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the air pollution control device (and located at or near such device) serving any electric submerged arc furnace subject to this regulation.

(12) "Control device" means the air pollution control equipment used to remove particulate matter generated by an electric submerged arc furnace from an effluent gas stream.

(13) "Classification date" means October 21, 1974.

(14) "Capture system" means the equipment (including hoods, ducts, fans, dampers, etc.) used to capture or transport particulate matter generated by an affected electric submerged arc furnace to the control device.

(15) "Standard ferromanganese" means that alloy as defined by A.S.T.M. designation A-99-66(71). (A.S.T.M. designations are filed by reference in 401 KAR 50:015.)

(16) "Silicomanganese" means that alloy as defined by A.S.T.M. designation A-483-64(74).

(17) "Calcium carbide" means material containing seventy (70) to eighty-five (85) percent calcium carbide by weight.

(18) "High-carbon ferrochrome" means that alloy as defined by A.S.T.M. designation A-101-73 grades HC1 through HC6.

(19) "Charge chrome" means that alloy containing fifty-two (52) to seventy (70) percent by weight chromium, five (5) to eight (8) percent by weight carbon, and three (3) to six (6) percent by weight silicon.

(20) "Silvery iron" means any ferrosilicon, as defined by A.S.T.M. designation A-100-69(74), which contains less than thirty (30) percent silicon.

(21) "Ferrochrome silicon" means that alloy as defined by A.S.T.M. designation A-482-66(71).

(22) "Silicomanganese zirconium" means that alloy containing sixty (60) to sixty-five (65) percent by weight silicon, 1.5 to 2.5 percent by weight calcium, five (5) to seven (7) percent by weight zirconium, 0.75 to 1.25 percent by weight aluminum, five (5) to seven (7) percent by weight manganese, and two (2) to three (3) percent by weight barium.

(23) "Calcium silicon" means that alloy as defined by A.S.T.M. designation A-495-64(70).

(24) "Ferrosilicon" means that alloy as defined by A.S.T.M. designation A-100-69 grades A, B, C, D, and E which contains fifty (50) or more percent by weight silicon.

(25) "Silicon metal" means any silicon alloy containing more than ninety-six (96) percent silicon by weight.

(26) "Ferromanganese silicon" means that alloy containing sixty-three (63) to sixty-six (66) percent by weight manganese, twenty-eight (28) to thirty-two (32) percent by weight silicon, and a maximum of 0.08 percent by weight carbon.

(27) "Concentrated discharge" means that the outlet from a control device consists of either stacks (one or more) or openings on the device's top or side which has (have) a total area less than five (5) percent of the corresponding top or side and which has (have) a length of not more than twice the width.

(28) "Dispersed discharge" means that the outlet from a control device consists of opening(s) on the device's top or side which has (have) a total area exceeding five (5) percent of the corresponding top or side or which have a length more than twice the width. A control device may have both dispersed and concentrated discharges.

Section 3. Standard for Particulate Matter.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any electric submerged arc furnace any gases which:

(a) Exit from a control device and contain particulate matter in excess of:

1. 0.45 kg/MW-hr (0.99 lb/MW-hr) while silicon metal, ferrosilicon, calcium silicon, or silicomanganese zirconium is being produced.

2. 0.23 kg/MW-hr (0.51 lb/MW-hr) while high-carbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, calcium carbide, ferrochrome silicon, ferromanganese silicon, or silvery iron is being produced.

(b) Exit from a control device and exhibit an opacity equal to or greater than:

1. Three (3) percent where a control device located in or impacting on a non-attainment area for particulates has dispersed discharge.

2. Fifteen (15) percent for all other control devices

(c) Exit from an electric submerged arc furnace and escape the capture system and are visible without the aid of instruments. The requirements under this paragraph apply only during periods when flow rates are being established under Section 6(4);

(d) Escape the capture system at the tapping station and are visible without the aid of instruments for more than forty (40) percent of each tapping period. There are no limitations on visible emissions under this paragraph when a blowing tap occurs. The requirements under this paragraph apply only during periods when flow rates are being established under Section 6(4).

(2) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any dust-handling equipment any gases which exhibit ten (10) percent opacity or greater.

Section 4. Standard for Carbon Monoxide. On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any electric submerged arc furnace any gases which contain, on a dry basis, twenty (20) or greater volume percent of carbon monoxide. Combustion of such gases under conditions acceptable to the Department constitutes compliance with this section. Acceptable conditions include, but are not limited to, flaring of gases or use of gases as fuel or other processes.

Section 5. Emission Monitoring.

(1) The owner or operator subject to the provisions of this regulation shall install, calibrate, maintain and operate a continuous monitoring system for measurement of the opacity of emissions discharged into the atmosphere from the control device(s) with a concentrated discharge.

(2) For the purpose of reports required under 401 KAR 59:005, Section 3, the owner or operator shall report as excess emissions all six (6) minute periods in which the average opacity is fifteen (15) percent or greater.

(3) The owner or operator subject to the provisions of this regulation shall submit a written report of any product change to the Department. Reports of product changes must be postmarked not later than thirty (30) days after implementation of the product change.

Section 6. Monitoring of Operations.

(1) The owner or operator of any electric submerged arc furnace subject to the provisions of this regulation shall maintain daily records of the following information:

(a) Product being produced;

(b) Description of constituents of furnace charge, including the quantity, by weight;

(c) Time and duration of each tapping period and the identification of material tapped (slag or product);

(d) All furnace power input data obtained under subsection (2) of this section;

(e) All flow rate data obtained under subsection (3) of this section or all fan motor power consumption and pressure drop data obtained under subsection (5) of this section.

(2) The owner or operator subject to the provisions of this regulation shall install, calibrate, maintain and operate a device to measure and continuously record the furnace power input. The furnace

power input may be measured at the output or input side of the transformer. The device must have an accuracy of ± five (5) percent over its operating range.

(3) The owner or operator subject to the provisions of this regulation shall install, calibrate, and maintain a monitoring device that continuously measures and records the volumetric flow rate through each separately ducted hood of the capture system, except as provided under subsection (5) of this section. The owner or operator of an electric submerged arc furnace that is equipped with a water cooled cover which is designed to contain and prevent escape of the generated gas and particulate matter shall monitor only the volumetric flow rate through the capture system for control of emissions from the tapping station. The owner or operator may install the monitoring device(s) in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device must have an accuracy of ± ten (10) percent over its normal operating range and must be calibrated according to the manufacturer's instructions. The Department may require the owner or operator to demonstrate the accuracy of the monitoring device relative to Reference Methods 1 and 2 of Appendix A to 40 CFR 60, filed by reference in 401 KAR 50:015.

(4) When performance tests are conducted under the provisions of 401 KAR 59:005, Section 2, to demonstrate compliance with the standards under Section 3(1)(c) and (d), volumetric flow rate through each separately ducted hood of the capture system must be determined using the monitoring device required under subsection (3) of this section. The volumetric flow rates must be determined for furnace power input levels at fifty (50) and 100 percent of the nominal rated capacity of the electric submerged arc furnace. At all times the electric submerged arc furnace is operated, the owner or operator shall maintain the volumetric flow rate at or above the appropriate levels for that furnace power input level determined during the most recent performance test. If emissions due to tapping are captured and ducted separately from emissions of the electric submerged arc furnace, during each tapping period the owner or operator shall maintain the exhaust flow rates through the capture system over the tapping station at or above the levels established during the most recent performance test. Operation at lower flow rates may be considered by the Department to be unacceptable operation and maintenance of the affected facility. The owner or operator may request that these flow rates be re-established by conducting new performance tests under 401 KAR 59:005, Section 2.

(5) The owner or operator may as an alternative to subsection (3) of this section determine the volumetric flow rate through each fan of the capture system from the fan power consumption, pressure drop across the fan and the fan performance curve. Only data specific to the operation of the affected electric submerged arc furnace are acceptable for demonstration of compliance with the requirements of this section. The owner or operator shall maintain on file a permanent record of the fan performance curve (prepared for a specific temperature) and shall:

(a) Install, calibrate, maintain, and operate a device to continuously measure and record the power consumption of the fan motor (measured in kilowatts); and

(b) Maintain and operate a device to continuously measure and record the pressure drop across the fan. The fan power consumption and pressure drop measurements must be synchronized to allow real time comparisons of the data. The monitoring devices must have an accuracy of ± five (5) percent over their normal operating ranges.

(6) The volumetric flow rate through each fan of the capture system must be determined from the fan power consumption, fan pressure drop, and fan performance curve specified under subsection (5) of this section, during any performance test required under 401 KAR 59:005, Section 2, to demonstrate compliance with the standards under Section 3(1)(c) and (d). The owner or operator shall determine the volumetric flow rate at a representative temperature for furnace power input levels of fifty (50) and 100 percent of the nominal rated capacity of the electric submerged arc furnace. At all times the electric submerged arc furnace is operated, the owner or operator shall maintain the fan power consumption and fan pressure drop at levels such that the volumetric flow rate is at or above the levels established during the most recent performance test for that furnace power input level. If emissions due to tapping are captured and ducted separately from the emissions of the electric submerged arc furnace, during each tapping period the owner or operator shall maintain the fan power consumption and fan pressure drop at levels such that the volumetric flow rate is at or above the levels established during the most recent performance test. Operation at lower flow rates may be considered by the Department to be unacceptable operation and maintenance of the affected facility. The owner or operator may request that these flow rates be re-established by conducting new performance tests under 401 KAR 59:005, Section 2. The Department may require the owner or operator to verify the fan performance curve by monitoring necessary fan operating parameters and determining the gas volume moved relative to Methods 1 and 2 of Appendix A to 40 CFR 60.

(7) All monitoring devices required under subsections (3) and (5) of this section are to be checked for calibration annually in accordance with the procedures under 401 KAR 59:005, Section 4(2).

Section 7. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, except as provided in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Sections 3 and 4 as follows:

(a) Reference Method 5 for the concentration of particulate matter and the associated moisture content except that the heating systems specified in paragraphs 2.1.2 and 2.1.4 of Reference Method 5 are not to be used when the carbon monoxide content of the gas stream exceeds ten (10) percent by volume, dry basis;

(b) Reference Method 1 for sample and velocity flow rate;

(c) Reference Method 2 for velocity and volumetric flow rate;

(d) Reference Method 3 for gas analysis, including carbon monoxide; and

(e) Reference Method 9 for opacity determination.

(2) For Reference Method 5, the sampling time for each run is to include an integral number of furnace cycles. The sampling time for each run must be at least sixty (60) minutes and the minimum sample volume must be 1.8 dscm (sixty-four (64) dscf) when sampling emissions from open electric submerged arc furnaces with wet scrubber control devices, sealed electric submerged arc furnaces, or semi-enclosed electric submerged arc furnaces. When sampling emissions from other types of installations, the sampling time for each run must be at least 200 minutes and the minimum sample volume must be 5.7 dscm (200 dscf). Shorter sampling times or smaller sampling volumes, when necessitated by process variables or other factors, may be approved by the Department.

(3) During the performance test, the owner or operator shall record the maximum open hood area (in hoods with segmented or otherwise moveable sides) under which the process is expected to be operated and remain in complaince with all standards. Any future operation of the hooding system with open areas in excess of the maximum is not permitted.

(4) The owner or operator shall construct the control device so that volumetric flow rates and particulate matter emissions can be accurately determined by applicable test methods and procedures.

(5) During any performance test required under 401 KAR 59:005, Section 2, the owner or operator shall not allow gaseous diluents to be added to the effluent gas stream after the fabric in an open pressurized fabric filter collector unless the total gas volume flow from the collector is accurately determined and considered in the determination of emissions.

(6) When compliance with Section 4 is to be attained by combusting the gas stream in a flare, the location of the sampling site for particulate matter is to be upstream of the flare.

(7) For each run, particulate matter emissions, expressed in kg/hr (lb/hr), must be determined for each exhaust stream at which emissions are quantified using the equation given in Appendix A to this regulation.

(8) For Method 5, particulate matter emissions from the affected facility, expressed in kg/MW-hr (lb/MW-hr) must be determined for each run using the equation given in Appendix B to this regulation.

APPENDIX A TO 401 KAR 59:160
DETERMINATION OF PARTICULATE MATTER EMISSIONS

$$En = C\ Q$$

Where:

En = Emissions of particulate matter in kg/hr (lb/hr).

C = Concentration of particulate matter in kg/dscm (lb/dscf) as determined by Reference Method 5.

Q = Volumetric flow rate of the effluent gas stream in dscm/hr (dscf/hr) as determined by Reference Method 2.

APPENDIX B TO 401 KAR 59:160
DETERMINATION OF PARTICULATE MATTER EMISSIONS
FOR METHOD 5

$$E = \frac{\sum_{n=1}^{N} E_n}{P}$$

Where:

E = Emissions of particulate from the affected facility in kg/MW-hr (lb/MW-hr).

N = Total number of exhaust streams at which emissions are quantified.

E_n = Emission of particulate matter from each exhaust stream in kg/hr (lb/hr), as determined in Section 7(7) of this regulation.

P = Average furnace power input during the sampling period, in megawatts as determined according to Section 6(2).

401 KAR 59:165. Steel plants and foundries using new electric arc furnaces.

Section 1. Applicability. The provisions of this regulation apply to the following affected facilities in steel plants and foundries: electric arc furnaces and/or associated metallurgical equipment located in the same shop as well as associated dust handling equipment commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Electric arc furnace (EAF)" means any furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. Furnaces from which the molten steel is cast into the shape of finished products, such as in a foundry, are affected facilities included within the scope of this definition. Furnaces which, as the primary source of iron, continuously feed pre-reduced ore pellets are not affected facilities within the scope of this definition.

(2) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the control device and located at or near the control device for an EAF subject to this regulation.

(3) "Control device" means the air pollution control equipment used to remove particulate matter generated by an EAF(s) from the effluent gas stream.

(4) "Capture system" means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by an EAF and associated metallurgical equipment to the air pollution control device.

(5) "Associated metallurgical equipment" in the shop includes but is not limited to scrap pre-heaters and degreasers, and equipment for hot metal transfer, charging, lancing, boiling, slagging, and de-slagging tapping, innoculating, teeming, hot-topping, vacuum de-gassing, continuous casting, etc.

(6) "Charge" means the addition of iron and steel scrap or other materials into the top of an electric arc furnace.

(7) "Charging period" means the time period commencing at the moment an EAF starts to open and ending either three (3) minutes after the EAF roof is returned to its closed position or six (6) minutes after commencement of opening of the roof, whichever is longer.

(8) "Tap" means the pouring of molten steel from an EAF.

(9) "Tapping period" means the time period commencing at the moment an EAF begins to tilt to pour and ending either three (3) minutes after an EAF returns to an upright position or six (6) minutes after commencing to tilt, whichever is longer.

(10) "Meltdown and refining" means the phase of the steel production cycle when charge material is melted and undesirable elements are removed from the metal.

(11) "Meltdown and refining period" means the time period commencing at the termination of the initial charging period and ending at the initiation of the tapping period, excluding any intermediate charging period.

(12) "Shop opacity" means the arithmetic average of twenty-four (24) or more opacity observations of emissions from the shop taken in accordance with Reference Method 9 of Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, for the applicable time periods.

(13) "Heat time" means the period commencing when scrap is charged to an empty EAF and terminating when the EAF tap is completed.

(14) "Shop" means the building which houses one or more EAF.

(15) "Direct shell evacuation system" means any system that maintains a negative pressure within the EAF above the slag or metal and ducts these emissions to the control device.

(16) "Concentrated discharge" means that the outlet from a control device consists of either stacks (one or more) or openings on the device's top or side which has (have) a total area less than five (5) percent of the corresponding top or side and which has (have) a length of not more than twice the width.

(17) "Dispersed discharge" means that the outlet from a control device consists of opening(s) on the device's top or side which has (have) a total area exceeding five (5) percent of the corresponding top or side or which have a length more than twice the width.

(18) "Classification date" means October 21, 1974.

Section 3. Standard for Particulate Matter.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from an electric arc furnace and associated metallurgical equipment any gases which:

(a) Exit from a control device and contain particulate matter in excess of 0.0052 grains/dscf (twelve (12) mg/dscm);

(b) Exit from a control device and exhibit three (3) percent opacity or greater .

(c) Exit from a shop and , due solely to operations of any EAF(s), exhibit greater than zero (0) percent shop opacity except:

1. Shop opacity greater than zero (0) percent, but less than twenty (20) percent may occur during charging periods.

2. Shop opacity greater than zero (0) percent, but less than forty (40) percent may occur during tapping periods.

3. Where the capture system is operated such that the roof of the shop is closed during the charge and the tap, and emissions to the atmosphere are prevented until the roof is opened after completion of the charge or tap, the shop opacity standards under paragraph (c) of this subsection shall apply when the roof is opened and shall continue to apply for the length of time defined by the charging and/or tapping periods.

4. Opacity standards under paragraph (c) of this subsection shall apply only during periods when flow rates and pressure are being established under Section 5 (3) and (6).

(2) On and after the date on which the performance test required to be conducted by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from dust-handling equipment any gases which exhibit ten (10) percent opacity or greater.

Section 4. Emission Monitoring.

(1) A continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) with a concentrated discharge shall be installed, calibrated, maintained and operated by the owner or operator subject to the provisions of this regulation.

(2) For the purpose of reports under 401 KAR 59:005, Section 3, periods of excess emissions that shall be reported are defined as all six (6) minute periods during which the average opacity is three (3) percent or greater.

Section 5. Monitoring of Operations.

(1) The owner or operator subject to the provisions of this regulation shall maintain records daily of the following information:

(a) Time and duration of each charge;

(b) Time and duration of each tap;

(c) All flow rate data obtained under subsection (2) of this section, or equivalent obtained under subsection (4) of this section; and

(d) All pressure data obtained under subsection (5) of this section.

(2) Except as provided under subsection (4) of this section, the owner or operator subject to the provisions of this regulation shall install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of ± ten (10) percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The Department may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Reference Methods 1 and 2 of Appendix A of 40 CFR 60.

(3) When the owner or operator of an EAF is required to demonstrate compliance with the standard under Section 3(1)(c), and at any other time the Department may require; the volumetric flow rate through each separately ducted hood shall be determined during all periods in which the hood is operated for the purpose of capturing emissions from the EAF using the monitoring device under subsection (2) of this section. The owner or operator may petition the Department for re-establishment of these flow rates whenever the owner or operator can demonstrate to the Department's satisfaction that the EAF operating conditions upon which the flow rates were previously established are no longer applicable. The flow rates determined during the most recent demonstration of compliance shall be maintained (or may be exceeded) at the appropriate level for each applicable period. Operation at lower flow rates may be considered by the Department to be unacceptable operation and maintenance of the affected facility.

(4) The owner or operator may petition the Department to approve any alternative method that will provide a continuous record of operation of each emission capture system.

(5) Where emissions during any phase of the heat time are controlled by use of a direct shell evacuation system, the owner or operator shall install, calibrate and maintain a monitoring device that continuously records the pressure in the free space inside the EAF. The pressure shall be recorded as fifteen (15) minute integrated averages. The monitoring device may be installed in any appropriate location in the EAF such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ± five (5) mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

(6) When the owner or operator of an EAF is required to demonstrate compliance with the standard under Section 3(1)(c) and at any other time the Department may require, the pressure in the free space inside the furnace shall be determined during the meltdown and refining period(s) using the monitoring device under subsection (5) of this section. The owner or operator may petition the Department for reestablishment of the fifteen (15) minute integrated average pressure whenever the owner or operator can demonstrate to the Department's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times the EAF is operating in a meltdown and refining period. Operation at higher pressures may be considered by the Department to be unacceptable operation and maintenance of the affected facility.

(7) Where the capture system is designed and operated such that all emissions are captured and ducted to a control device, the owner or operator shall not be subject to the requirements of this section.

(8) Where each EAF in a shop has an actual tapping capacity of less than ten (10) tons, the owner or operator shall not be subject to the requirements of this section.

Section 6. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standard prescribed in Section 3 as follows:

(a) Reference Method 5 for concentration of particulate matter and associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate;

(d) Reference Method 3 for gas analysis; and

(e) Reference Method 9 for opacity determination.

(2) For Reference Method 5, the sampling time for each run shall be at least four (4) hours. When a single EAF is sampled, the sampling time for each run shall also include an integral number of heats. Shorter sampling times, when necessitated by process variables or other factors, may be approved by the Department. The minimum sample volume shall be 4.5 dscm (160 dscf).

(3) For the purpose of this regulation, the owner or operator shall conduct the demonstration of compliance with Section 3(1)(c) and furnish the Department a written report of the results of the test.

(4) During any performance test required under 401 KAR 59:005, Section 2, no gaseous diluents may be added to the effluent gas stream after the fabric in any pressurized fabric filter collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(5) When more than one control device serves the EAF(s) being tested, the concentration of particulate matter shall be determined using the equation given in Appendix A of this regulation.

(6) Any control device subject to the provisions of this regulation shall be designed and constructed to allow measurement of volumetric flow rate and emissions using applicable test methods and procedures.

(7) Where emissions from any EAF(s) are combined with emissions from other affected facilities in the same shop and controlled by a common capture system and control device, the owner or operator may use any of the following procedures during a performance test:

(a) Base compliance on control of the combined emissions;

(b) Utilize a method acceptable to the Department which compensates for the emissions from the other affected facilities; and,

(c) Any combination of the criteria of paragraphs (a) and (b) of this subsection.

Section 7. 401 KAR 3:050 is hereby repealed.

APPENDIX A TO 401 KAR 59:165
DETERMINATION OF CONCENTRATION OF PARTICULATE MATTER

$$C = \frac{\sum_{n=1}^{N} (C\ Q)_n}{\sum_{n=1}^{N} (Q)_n}$$

Where:

C = concentration of particulate matter in mg/dscm (gr/dscf) as determined by Reference Method 5.

N = total number of control devices tested.

Q = volumetric flow rate of the effluent gas stream in dscm/hr (dscf/hr) as determined by Reference Method 2.

$(C\ Q)_n$ or $(Q)_n$ = value of the applicable parameter for each control device tested (n).

401 KAR 59:170. New lime manufacturing plants.

Section 1. Applicability.

(1) The provisions of this regulation are applicable to the following affected facilities used in the manufacture of lime: rotary lime kilns and lime hydrators.

(2) The provisions of this regulation are not applicable to facilities used in the manufacture of lime at kraft pulp mills.

(3) Any facility under subsection (1) of this section that commences on or after the classification date defined below, is subject to the requirements of this regulation.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the same meaning given them in 401 KAR 50:010.

(1) "Lime manufacturing plant" means any plant which produces a lime product from limestone by calcination. Hydration of the lime product is also considered to be part of the source.

(2) "Lime product" means the product of the calcination process including, but not limited to, calcitic lime, dolomitic lime, and dead-burned dolomite.

(3) "Rotary lime kiln" means a unit with an inclined rotating drum which is used to produce a lime product from limestone by calcination.

(4) "Lime hydrator" means a unit used to produce hydrated lime product.

(5) "Classification date" means May 3, 1977.

Section 3. Standard for Particulate Matter. On and after the date on which the performance test required by 401 KAR 59:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere:

(1) from any rotary lime kiln any gases which:

(a) Contain particulate matter in excess of 0.15 kilogram per megagram of limestone feed (0.30 lb/ton).

(b) Exhibit ten (10) percent opacity or greater.

(2) From any lime hydrator any gases which contain particulate matter in excess of 0.075 kilogram per megagram of lime feed (0.15 lb/ton).

Section 4. Monitoring of Emissions and Operations.

(1) The owner or operator subject to the provisions of this regulation shall install, calibrate, maintain, and operate a continuous monitoring system, except as provided in subsection (2) of this section, to monitor and record the opacity of a representative portion of the gases discharged into the atmosphere from any rotary lime kiln. The span of this system shall be set at forty (40) percent opacity.

(2) The owner or operator of any rotary lime kiln using a wet scrubbing emission control device subject to the provisions of this regulation shall not be required to monitor the opacity of the gases discharged as required in subsection (1) of this section, but shall install, calibrate, maintain, and operate the following continuous monitoring devices:

(a) A monitoring device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be accurate within ± 250 pascals (one inch of water).

(b) A monitoring device for the continuous measurement of the scrubbing liquid supply pressure to the control device. The monitoring device must be accurate within ± five (5) percent of design scrubbing liquid supply pressure.

(3) The owner or operator of any lime hydrator using a wet scrubbing emission control device subject to the provisions of this regulation shall install, calibrate, maintain, and operate the following continuous monitoring devices:

(a) A monitoring device for the continuous measuring of the scrubbing liquid flow rate. The monitoring device must be accurate within ± five (5) percent of design scrubbing liquid flow rate.

(b) A monitoring device for the continuous measurement of the electric current, in amperes, used by the scrubber. The monitoring device must be accurate within ± ten (10) percent over its normal operating range.

(4) For the purpose of conducting a performance test under 401 KAR 59:005, Section 2, the owner or operator of any lime manufacturing plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate a device for measuring the mass rate of limestone feed to any affected rotary lime kiln and the mass rate of lime feed to any affected lime hydrator. The measuring device used must be accurate to within ± five (5) percent of the mass rate over its operating range.

(5) For the purpose of reports required under 401 KAR 59:005, Section 3, periods of excess emissions that shall be reported are defined as all six minute periods during which the average opacity of the plume from any lime kiln subject to this regulation is ten (10) percent or greater.

Section 5. Test Methods and Procedures.

(1) Reference methods in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided under 401 KAR 50:045, shall be used to determine compliance with Section 3(1) as follows:

(a) Method 5 for the measurement of particulate matter;
(b) Method 1 for sample and velocity traverses;
(c) Method 2 for velocity and volumetric flow rate;
(d) Method 3 for gas analysis;
(e) Method 4 for stack gas moisture; and
(f) Method 9 for visible emissions.

(2) For Method 5, the sampling time for each run shall be at least sixty (60) minutes and the sampling rate shall be at least 0.85 std cubic meters per hour, dry basis (0.53 dscf/min), except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the Department.

(3) Because of the high moisture content (forty (40) to eight-five (85) percent by volume) of the exhaust gases from hydrators, the Method 5 sample train may be modified to include a calibrated orifice immediately following the sample nozzle when testing lime hydrators. In this configuration, the sampling rate necessary for maintaining isokinetic conditions can be directly related to exhaust gas velocity without a correction for moisture content. Extra care should be exercised when cleaning the sample train with the orifice in this position following the test runs.

401 KAR 59:175. New service stations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility located in urban counties designated non-attainment for ozone according to 401 KAR 51:010 which commenced on or after the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means the gasoline storage tanks at a service station.

(2) "Classification date" means the effective date of this regulation.

(3) "Service station" means any public or private establishment which dispenses gasoline into vehicle fuel tanks.

(4) "Submerged fill pipe" means any fill pipe the discharge of which is entirely submerged when the liquid level is six (6) inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean any fill pipe the discharge opening of which is entirely submerged when the liquid level is two (2) times the fill pipe diameter above the bottom of the tank.

(5) "Vapor balance system" means a system which conducts vapors displaced from storage tanks during filling operations to the storage compartment of the transport vehicle delivering the fuel.

(6) "Vent line restriction" means:

(a) an orifice of one-half to three-quarters inch inside diameter; or

(b) a pressure-vacuum relief valve set to open at eight (8) oz. per square inch pressure and four (4) oz. per square inch vacuum; or

(c) a vent shut-off valve which is activated by connection of the vapor return hose.

(7) "Interlocking system" means devices which keep the storage tank sealed unless the vapor hose is connected or which prevent delivery of fuel until the vapor hose is connected.

Section 3. Standard for Volatile Organic Compounds.

(1) The owner or operator of an affected facility shall install, maintain, and operate the following devices:

(a) Submerged fill pipe;

(b) Gauge well drop tube which extends to within six (6) inches of the bottom of the tank;

(c) Vent line restriction on the affected facility vent line; and

(d) Vapor balance system with an interlocking system and vapor tight connections on the liquid fill line and the vapor return line. The cross-sectional area of the vapor return hose must be at least fifty (50) percent of the liquid fill hose, and free of flow restrictions to achieve acceptable recovery. The size and design of the vapor return line and connections, including coaxial systems, are subject to the approval of the Department.

(2) The owner or operator may elect to use an alternate control system if that system can be demonstrated to the Department's satisfaction to achieve an equivalent control efficiency.

(3) The owner or operator shall not allow any transport vehicle to deliver fuel to an affected facility until the transport vehicle is properly connected to the vapor balance system or alternate control system.

401 KAR 59:180. New automobile and light duty truck surface coating operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced on or after the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any other county and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for automobile and light-duty truck frames, small parts, wheels, and main body parts at an assembly plant but does not include the following:

(a) Underbottom - sound deadener coatings;

(b) Zinc rich anti-rust and weld line anti-rust prime coatings;

(c) Adhesive coatings or mastics;

(d) Flexible coatings;

(e) Plastic body fillers or caulks; or

(f) Interior coatings which are applied after upholstery and interior plastic parts are attached to the body.

(2) "Applicator" means the mechanism or device used to apply the coating, including, but not limited to dipping and spraying.

(3) "Automobile" means all passenger cars or passenger car derivatives capable of seating twelve (12) or fewer passengers.

(4) "Classification date" means the effective date of this regulation.

(5) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat or repair coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;

(b) process storage;

(c) applicators;

(d) drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) clean up operations;

(f) leaks, spills and disposal of volatile organic compounds;

(g) processing and handling of recovered volatile organic compounds;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;

(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 5, then that portion shall be considered to be a separate coating line.

(6) "Final repair coating line" means a coating line for the repainting of any coatings which are damaged during vehicle assembly.

(7) "Flashoff area" means the space between the application area and the oven.

(8) "Light-duty truck" means any motor vehicle rated at 3,864 kilograms (8,500 pounds) gross vehicle weight or less which are designed primarily for purposes of transportation of property or are derivatives of such vehicles (including but not limited to, pickups, vans, and window vans).

(9) "Prime coat coating line" means a coating line for the first coating and surfacer which are responsible for protecting the surface from corrosion and providing for good adhesion of the topcoat.

(10) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(11) "Topcoat coating line" means a coating line for the coating of the surface to obtain desired aesthetic effects.

(12) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(13) "Surfacer" means the spray application of primer to touch-up areas on the surface not adequately covered during electrodeposition.

(14) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being

emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

(15) "Electrophoretic deposition" means a process of applying a coating by dipping the component in a coating bath with an electrical potential difference between the component and the bath.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under Section 5.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 5. The following methods of analyses, filed by reference in 401 KAR 50:015, for coatings shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75 Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Exemptions. Any affected facility shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is:

(1) Prime coating line: 0.14 kilograms per liter of coating (1.2 pounds per gallon), excluding water, which shall be applied by electrophoretic deposition and 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the applicators associated with the surfacer. An alternative for the surfacer is fifty-five (55) percent solids by volume organic-borne prime coat applied with a minimum of sixty-five (65) percent transfer efficiency.

(2) Topcoat coating line: 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the applicator(s) associated with the topcoat coating line , or a fifty (50) percent solids by volume organic-borne topcoat applied with a minimum of sixty-five (65) percent transfer efficiency.

(3) Repair coating line: 0.58 kilograms per liter of coating (4.8 pounds per gallon), excluding water, as delivered to the applicator applied with a minimum of sixty-five (65) percent transfer efficiency.

(4) Any owner or operator who elects to qualify for an exemption under this section shall achieve compliance on or before the following dates:

(a) Prime coating systems and final repair coating systems; January 1, 1983.

(b) Topcoat systems; January 1, 1986.

(5) Any affected facility using this section of this regulation may elect to use an arithmetic average of the coatings used in the particular coating line involved. If such average meets the exemption then all coatings will be considered to meet the exemption.

(6) The exemptions specified in this section may be achieved by:

(a) Use of low solvent coating and/or

(b) Any other emission reduction process or equipment shown to be as effective.

Section 6. Variances. For coating of non-metal components, variation with the standards, limitations and compliance timetables contained in this regulation, when supported by adequate technical information, will be considered by the department on a case-by-case basis to allow for technological or economic circumstances which are unique to a source.

401 KAR 59:185. New solvent metal cleaning equipment.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced on or after the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010 or

(2) In any other county and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means cold cleaners, open top vapor degreasers, and conveyorized degreasers which utilize volatile organic compounds to remove soluable impurities from metal surfaces.

(2) "Volatile organic compounds" means chemical compounds of carbon excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate which have a vapor pressure greater than one tenth (0.1) mm of Hg at conditions of twenty (20) degress Celsius and 760 mm of Hg.

(3) "Classification date" means the effective date of this regulation.

(4) "Freeboard height" means, for a cold cleaner, the distance from the liquid solvent level in the degreaser tank to the lip of the tank. For a vapor degreaser it is the distance from the solvent vapor level in the tank to the lip of the tank.

(5) "Freeboard ratio" means the freeboard height divided by the width of the degreaser.

(6) "Refrigerated chiller" means a second set of freeboard condenser coils located slightly above the primary condenser coils which create a cold air blanket above the vapor zone.

(7) "Cold cleaner" means a batch-loaded degreaser whose solvent is kept below its boiling point.

(8) "Open top vapor degreaser" means a batch loaded degreaser whose solvent is heated to its boiling point creating a solvent vapor zone.

(9) "Conveyorized degreasers" means a degreaser which is continuously loaded by means of a conveyor system. Its solvent may be boiling or non-boiling.

(10) "Solvent" means, in this regulation, volatile organic compounds.

Section 3. Standard for Volatile Organic Compounds. The owner or operator of an affected facility to which this regulation applies shall install, maintain and operate the control equipment and observe at all times the operating requirements which apply to his type of degreaser as specified in Sections 4, 5, and 6.

Section 4. Cold Cleaners.

(1) Control equipment:

(a) The cleaner shall be equipped with a cover. If the solvent volatility is greater than fifteen (15) mm of Hg measured at 100°F or if the solvent is agitated or heated, then the cover shall be designed so that it can be easily operated with one hand.

(b) The cleaner shall be equipped with a drainage facility such that solvent that drains off parts removed from the cleaner will return to the cleaner. If the solvent volatility is greater than thirty-two (32) mm of Hg measured at 100°F then the drainage facility shall be internal so that parts are enclosed under the cover while draining. The drainage facility may be external if the department determines that an internal type cannot fit into the cleaning system.

(c) A permanent, conspicuous label, summarizing the operating requirements specified in Section 4 (2) shall be installed on or near the cleaner.

(d) If used, the solvent spray shall be a fluid stream (not a fine, atomized or shower type spray) and at a pressure which does not cause excessive splashing.

(e) If the solvent volatility is greater than thirty-two (32) mm of Hg measured at 100°F or if the solvent is heated above 120°F, then one of the following control devices shall be used:

1. Freeboard that gives a freeboard ratio greater than or equal to 0.7.

2. Water cover (solvent must be insoluable in and heavier than water).

3. Other systems of equivalent control, such as a refrigerated chiller or carbon adsorption.

(2) Operating requirements:

(a) Do not dispose of waste solvent or transfer it to another party, such that greater than twenty (20) percent by weight of the waste solvent can evaporate into the atmosphere. Store waste solvent only in covered containers.

(b) Close degreaser cover whenever not handling parts in the cleaner.

(c) Drain cleaned parts until dripping ceases (fifteen seconds is usually necessary).

Section 5. Open Top Vapor Degreasers.

(1) Control equipment:

(a) The degreaser shall be equipped with a cover that can be opened and closed easily without disturbing the vapor zone.

(b) The degreaser shall be equipped with the following safety switches:

1. Condenser flow switch and thermostat to shut off sump heat if condenser coolant either is not circulating or is too warm.

2. Spray safety switch to shut off spray pump if the vapor level drops more than four (4) inches below the bottom condenser coil in order to prevent spraying above the vapor level.

3. Vapor level control thermostat which shuts off sump heat if the vapor zone rises above the design level.

4. Equivalent safety systems as approved on a case-by-case basis by the department.

(c) The degreaser shall be equipped with at least one of the following major control devices:

1. Freeboard ratio greater than or equal to 0.75, and if the degreaser opening is greater than ten (10) square feet, the cover shall be powered or mechanically assisted.

2. Refrigerated chiller.

3. Enclosed design such that the cover or door opens only when the dry part is actually entering or exiting the degreaser.

4. Carbon adsorption system, with ventilation greater than or equal to fifty (50) cfm/square foot of air/vapor interface area (when cover is open), and exhausting less than twenty-five (25) ppm by volume solvent averaged over one complete adsorption cycle.

5. Control system demonstrated to have control efficiency equivalent to or better than any of the above.

(d) A permanent, conspicuous label, summarizing the operating procedures specified in subsection (2) of this section shall be installed on or near the degreaser.

(2) Operating requirements:

(a) Keep the cover closed at all times except when processing work loads through the degreaser.

(b) Minimize solvent carry-out by the following measures:

1. Rack parts so that entrainment of solvent is avoided and full drainage is accomplished.

2. Move parts in and out of the degreaser at a vertical speed less than eleven (11) ft./min.

3. Degrease the work load in the vapor zone until condensation ceases (thirty (30) seconds or more is usually necessary).

4. Tip out any pools of solvent on the cleaned parts before removal.

5. Allow parts to dry within the degreaser above the vapor zone until visually dry (fifteen (15) seconds is usually necessary).

(c) Do not degrease porous or absorbent materials such as cloth, leather, wood, or rope.

(d) Work loads should not occupy more than half of the degreaser's open top area.

(e) The vapor level should not drop more than four (4) inches when the work load enters or leaves the vapor zone.

(f) Never spray above the vapor level.

(g) Repair solvent leaks immediately or shut down the degreaser.

(h) Do not dispose of waste solvent or transfer it to another party such that greater than twenty (20) percent by weight of the waste solvent can evaporate into the atmosphere. Store waste solvent only in closed containers.

(i) Exhaust ventilation should not exceed sixty-five (65) cfm per square foot of degreaser area unless necessary to meet OSHA requirements or control device requirements. Ventilation fans should not be used near the degreaser opening.

(j) Water should not be visually detectable in the solvent exiting the water separator.

Section 6. Conveyorized Degreasers.

(1) Control equipment:

(a) A conveyorized degreaser shall be enclosed except for work load entrances and exits.

(b) The degreaser shall be equipped with a drying tunnel or another means such as rotating baskets sufficient to prevent cleaned parts from carrying out solvent liquid or vapor.

(c) Minimized openings: entrances and exits shall silhouette work loads so that the average clearance between the largest parts and the edge of the degreaser opening is either less than four (4) inches or less than ten (10) percent of the width of the opening.

(d) Down-time covers: The degreaser shall be equipped with covers for closing off the entrance and exit during shutdown hours.

(e) If the degreaser has an air/solvent interface area or an air/vapor interface area equal to or greater than twenty (20) square ft. it shall be equipped with at least one of the following major control devices:

1. Refrigerated chiller.

2. Carbon adsorption system with ventilation greater than or equal to fifty (50) cfm/square foot of air/vapor interface area (when down-time covers are open) and exhausting less then twenty five (25) ppm of solvent by volume averaged over a complete adsorption cycle.

3. A system demonstrated to have a control efficiency equivalent to or better than either of the above.

(f) If the degreaser is a vapor type, it shall be equipped with the following safety switches:

1. Condensor flow switch and thermostat which will shut off the sump heat if coolant is either not circulating or is too warm.

2. Spray safety switch which will shut off the spray pump or conveyor if the vapor level drops more than four (4) inches below the bottom condenser coil in order to prevent spraying above the vapor level.

3. Vapor level control thermostat which will shut off sump heat if the vapor level rises above the design level.

4. Equivalent safety systems as approved on a case-by-case basis by the department.

(g) A permanent, conspicuous label, summarizing the operating procedures specified in subsection (2) of this section shall be installed on or near the degreaser.

(2) Operating requirements:

(a) Exhaust ventilation should not exceed sixty-five (65) cfm per square foot of degreaser opening unless necessary to meet OSHA requirements or control device requirements. Work place fans should not be used near the degreaser opening.

(b) Minimize solvent carry-out by the following measures:

1. Rack parts so that entrainment of solvent is avoided and full drainage is accomplished.

2. Maintain vertical conveyor speed at less than eleven (11) ft/min.

(c) Do not dispose of waste solvent or transfer it to another party such that greater than twenty (20) percent by weight of the waste solvent can evaporate into the atmosphere. Store waste solvent only in closed containers.

(d) Repair solvent leaks immediately or shutdown the degreaser.

(e) Water should not be visually detectable in the solvent exiting the water separator.

(f) Down-time covers shall be placed over entrances and exits of the degreaser immediately after the conveyor and exhaust are shut down and removed just before they are started up.

401 KAR 59:190. New insulation of magnet wire operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced on or after the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any other county and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for insulation of magnet wire.

(2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to a coating bath.

(3) "Coating die" means the device, located between the applicator and the drying oven, which scrapes off excess coating and leaves a thin film of desired thickness.

(4) "Magnet wire" means wire used in such equipment as electrical motors, generators, and transformers which carries an electrical current.

(5) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;

(b) process storage;

(c) applicators;

(d) drying operations including coating die area evaporation, oven drying, baking, curing, and polymerization;

(e) clean up operations;

(f) leaks, spills and disposal of volatile organic compounds;

(g) processing and handling of recovered volatile organic compounds;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;

(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 5, then that portion shall be considered to be a separate coating line.

(6) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(7) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(8) "Classification date" means the effective date of this regulation.

(9) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the department of: the control system design, control device efficiency, control system capture efficiency and any other factors that could influence the performance of the system. If so requested by the department, performance tests as specified by the department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the department, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under Section 5.

(4) Whenever deemed necessary by the department, the department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 5. The following methods of analyses, filed by reference in 401 KAR 50:015, for coatings shall be used as applicable except in those cases where the department determines that other methods would be more appropriate:

(a) ASTM D 1644-75 Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Exemptions.

(1) Any affected facility shall be exempt from the provisions of Section 3 of this regulation if the volatile organic compound content of the coating is less than 0.20 kilograms per liter of coating (1.7 pounds per gallon), excluding water, delivered to the applicators associated with the coating line.

(2) An owner or operator electing to qualify for an exemption under this section must achieve final compliance for that affected facility by July 1, 1981.

401 KAR 59:195. New metal furniture surface coating operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced on or after the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any other county and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for indoor and/or outdoor metal furniture.

(2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to: dipping, spraying, or flow-coating.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "Prime coat" means the first film of coating applied in a two-coat operation which is responsible for protecting the surface from corrosion and providing for good adhesion of the topcoat.

(5) "Topcoat" means the final film of coating applied in a two-coat operation to obtain desired aesthetic effects.

(6) "Single coat" means a single film coating applied directly to the metal substrate omitting the prime coat.

(7) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat or single coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;

(b) process storage;

(c) applicators;

(d) drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) clean up operations;

(f) leaks, spills and disposal of volatile organic compounds;

(g) processing and handling of recovered volatile organic compounds;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;

(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 5, then that portion shall be considered to be a separate coating line.

(8) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one-tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(9) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(10) "Metal furniture" means household and business items including but not limited to; tables, chairs, waste baskets, beds, desks, lockers, benches, shelving, file cabinets, lamps and room dividers.

(11) "Classification date" means the effective date of this regulation.

(12) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under Section 5.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 5. The following methods of analyses, filed by reference in 401 KAR 50:015, for coatings shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75 Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Exemptions.

(1) Any affected facility shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is less than 0.36 kilograms per liter of coating (3.0 pounds per gallon), excluding water, delivered to the applicators associated with the prime, single or topcoat coating line.

(2) An owner or operator electing to qualify for an exemption under this section must achieve final compliance for that affected facility by April 1, 1981.

401 KAR 59:200. New large appliance surface coating operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced on or after the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any other county and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for large appliances such as, but not limited to: doors, cases, lids, panels and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dish washers, trash compactors, and air conditioners.

(2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to dipping or spraying.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "Prime coat" means the first film of coating applied in a two-coat operation.

(5) "Topcoat" means the final film of coating applied in a two-coat operation.

(6) "Single coat" means a single film coating applied directly to the metal substrate omitting the prime coat.

(7) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat or single coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;
(b) process storage;
(c) applicators;
(d) drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;
(e) clean up operations;
(f) leaks, spills and disposal of volatile organic compounds;
(g) processing and handling of recovered volatile organic compounds:
(h) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;
(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 5, then that portion shall be considered to be a separate coating line.

(8) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(9) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(10) "Classification date" means the effective date of this regulation.

(11) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are not prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under Section 5.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 5. The following methods of analyses, filed by reference in 401 KAR 50:015, for coatings shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75 Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Exemptions.

(1) Any affected facility shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is less than 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the applicators associated with the prime, single or topcoat coating line.

(2) Repair coating operations for the purpose of repairing scratches and nicks that occur during assembly shall be exempt from the provisions of Section 3.

(3) An owner or operator electing to qualify for an exemption under this section must achieve final compliance for that affected facility by January 1, 1982.

401 KAR 59:210. New fabric, vinyl and paper surface coating operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced on or after the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any other county and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for fabric, vinyl, or paper.

(2) "Applicator" means the mechanism or device used to apply the coating including but not limited to: roll, knife, or rotogravure coater.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;
(b) process storage;
(c) applicators;

(d) drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) clean up operations;

(f) leaks, spills and disposal of volatile organic compounds;

(g) processing and handling of recovered volatile organic compounds;

(h) For the proposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;

(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 5, then that portion shall be considered to be a separate coating line.

(5) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one-tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(6) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(7) "Fabric coating" means the coating of a textile substrate to impart properties that are not initially present, such as strength, stability, water or acid repellancy, or appearance.

(8) "Vinyl coating" means the coating of vinyl coated fabric or vinyl sheets which includes decorative or protective topcoats or printing.

(9) "Paper coating" means the application of a uniform layer of material across the entire width of a web of paper , pressure sensitive tapes regardless of substrate, related web coating processes on plastic film such as typewriter ribbons, photographic film, magnetic tape, and decorative coatings on metal foil such as gift wrap and packaging , but does not include the printing of paper.

(10) "Knife coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a knife that spreads the coating evenly over the full width of the substrate.

(11) "Roll coating" means the application of a coating material to a substrate by means of hard rubber or steel rolls.

(12) "Rotogravure coating" means the application of a coating material to a substrate by means of a roll coating technique in which the pattern to be applied is etched on the coating roll. The coating material is picked up in these recessed areas and is transferred to the substrate.

(13) "Classification date" means the effective date of this regulation.

(14) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being

emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

(15) "Printing" means the formation of words, designs and pictures, usually by a series of application rolls each with only partial coverage. It applies to flexagraphic and rotogravure processes as applied to publication and packaging printing.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under Section 5.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 5. The following methods of analyses, filed by reference in 401 KAR 50:015, for coatings shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75 Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Exemptions.

(1) Any affected facility coating fabric or paper shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is less than 0.35 kilograms per liter of coating (2.9 pounds per gallon), excluding water, delivered to the applications associated with the coating line.

(2) Any affected facility coating vinyl shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is less than 0.45 kilograms per liter of coating (3.8 pounds per gallon) excluding water, delivered to the applicators associated with the coating line.

(3) An owner or operator electing to qualify for an extension under this section must achieve final compliance for that affected facility by December 1, 1981.

401 KAR 59:215. New can surface coating operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced on or after the classification date defined below which is located:

(1) in an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) in any other county and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for cans.

(2) "Applicator" means the mechanism or device used to apply the coating including but not limited to spray or roller.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "End sealing compound" means a synthetic rubber compound which is coated onto can ends and functions as a gasket when the end is assembled on the can.

(5) "Exterior base coating" means a coating applied to the exterior of a can to provide exterior protection to the metal and background for the lithographic or printing operation.

(6) "Interior base coating" means a coating applied by roller coater or spray to the interior of a can to provide a protective lining between the can metal and product.

(7) "Interior body spray" means a coating sprayed on the interior of the can body to provide a protective film between the product and the can.

(8) "Overvarnish" means a coating applied directly over ink to reduce the coefficient of friction, to provide gloss and to protect the finish against abrasion and corrosion.

(9) "Three-piece can side-seam spray" means a coating sprayed on the exterior and interior of a welded, cemented or soldered seam to protect the exposed metal.

(10) "Two-piece can exterior end coating" means a coating applied by roller coating or spraying to the exterior end of a can to provide protection to the metal.

(11) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;

(b) process storage;

(c) applicators;

(d) drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) clean up operations;

(f) leaks, spills and disposal of volatile organic compounds;

(g) processing and handling of recovered volatile organic compounds;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;

(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 5, then that portion shall be considered to be a separate coating line.

(12) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one-tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(13) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(14) "Classification date" means the effective date of this regulation.

(15) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to quality for an exemption under Section 5.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 5. The following methods of analyses, filed by reference in 401 KAR 50:015, for coating shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75, Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Exemptions. Any affected facility shall be exempt from the provision of Section 3 if the volatile organic compound content of the coating is:

(1) less than 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the applicators associated with the sheet basecoat (exterior and interior) and overvarnish or, two-piece can exterior (basecoat and overvarnish) coating lines;

(2) less than 0.51 kilograms per liter of coating (4.2 pounds per gallon), excluding water, delivered to the applicators associated with the two and three-piece can interior body spray or two-piece can exterior end (spray or roll coat) coating lines;

(3) less than 0.66 kilograms per liter of coating (5.5 pounds per gallon), excluding water, delivered to the applicators associated with the three-piece can side-seam spray coating line;

(4) less than 0.44 kilograms per liter of coating (3.7 pounds per gallon), excluding water, delivered to the applicators associated with the end sealing compound coating line.

(5) An owner or operator electing to qualify for an exemption under this section must achieve final compliance for that affected facility by April 1, 1981.

401 KAR 59:220. New coil surface coating operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced on or after the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010 or

(2) In any other county and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for metal sheets or strips that comes in rolls or coils.

(2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to: roller or spray.

(3) "Quench area" means a chamber where the hot metal exiting the oven is cooled by either a spray of water or a blast of air followed by water cooling.

(4) "Prime coat" means the first film of coating applied in a two-coat operation which is responsible for protecting the surface from corrosion and providing for good adhesion of the topcoat.

(5) "Topcoat" means the final film of coating applied in a two-coat operation to obtain desired aesthetic effects.

(6) "Single coat" means a single film coating applied directly to the metal substrate omitting the prime coat.

(7) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat, or single coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;

(b) process storage;

(c) applicators;

(d) drying operations including, but not limited to, quench area, oven drying, baking, curing, and polymerization;

(e) clean up operations;

(f) leaks, spills and disposal of volatile organic compounds;

(g) processing and handling of recovered volatile organic compounds;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;

(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 5, then that portion shall be considered to be a separate coating line.

(8) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one-tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(9) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(10) "Classification date" means the effective date of this regulation.

(11) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under Section 5.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 5. The following methods of analyses, filed by reference in 401 KAR 50:015, for coatings shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75 Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Exemptions.

(1) Any affected facility shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is less than 0.31 kilograms per liter of coating (2.6 pounds per gallon), excluding water, delivered to the applicators associated with the prime, single or topcoat coating line.

(2) An owner or operator electing to qualify for an exemption under this section must achieve final compliance for that affected facility by April 1, 1981.

CHAPTER 61
EXISTING SOURCE STANDARDS

401 KAR 61:005. General provisions.

Section 1. Applicability. The provisions of this chapter shall apply to the owner or operator of any existing source for which a standard of performance has been promulgated under this chapter.

Section 2. Performance Test.

(1) On or before the completion of a control plan at an affected facility and at such other times as may be required by the department, the owner or operator of an affected facility, except for those affected facilities specified below, shall conduct performance test(s) according to 401 KAR 50:045 and shall furnish the department a written report of the results of such performance test(s).

(a) Process operation with a process weight rate of less than 100 tons per hour;

(b) Indirect heat exchangers of less than 250 million BTU heat input;

(c) Incinerator with a charging rate of forty-five (45) metric tons per day (fifty (50) tons/day) or less;

(d) Affected facilities specified in 401 KAR 61:040, 401 KAR 61:045, 401 KAR 61:050, 401 KAR 61:056, 401 KAR 61:060, 401 KAR 61:085, 401 KAR 61:090, 401 KAR 61:095, 401 KAR 61:100, 401 KAR 61:105, 401 KAR 61:110, 401 KAR 61:120, 401 KAR 61:125, 401 KAR 61:130, and 401 KAR 61:135.

(2) The department may require the owner or operator of any affected facility including those specified in subsection (1) of this section to conduct performance test(s) according to 401 KAR 50:045 and furnish a written report of the results of such performance test(s).

Section 3. Emission Monitoring. This section sets forth the minimum requirements for continuous emission monitoring, recording, and reporting for source categories which are set forth. It includes the performance specifications for accuracy, reliability, and durability of acceptable monitoring systems and techniques to convert emission data to units of applicable emission standards.

(1) The owner or operator of a source in a category listed below shall:

(a) Install, calibrate, operate and maintain all monitoring equipment necessary for continuously monitoring the pollutants specified in this section for the applicable source category;

(b) Complete the installation and performance tests of such equipment and begin monitoring and recording within eighteen (18) months of the effective date of this regulation, except as provided in paragraph (c) of this subsection; and

(c) For continuous emission monitoring systems for which there are no performance specifications under Appendix B of 40 CFR 60, filed by reference in 401 KAR 50:015, as of the effective date of this regulation, complete the installation and performance tests of such equipment and begin monitoring and recording within eighteen (18) months of promulgation of the applicable performance specifications under Appendix B of 40 CFR 60.

(2) The source categories and the respective monitoring requirements are listed below.

(a) Indirect heat exchangers, as specified in subsection (6)(a) of this section shall be monitored for opacity, sulfur dioxide emissions, and oxygen or carbon dioxide.

(b) Sulfuric acid plants, as specified in subsection (6)(b) of this section shall be monitored for sulfur dioxide emissions.

(c) Nitric acid plants as specified in subsection (6)(c) of this section shall be monitored for nitrogen oxides emissions.

(d) Petroleum refinery affected facilities as specified in subsection (6)(d) of this section shall be monitored as specified in subsection (6)(d) of this section.

(e) Incinerators, as specified in subsection (6)(e) of this section, shall be monitored for opacity.

(f) Control devices, as specified in subsection (6)(f) of this section, shall be monitored for opacity.

(3) Exemption. Sources which are scheduled for retirement within five (5) years after the effective date of this regulation are exempt from the requirements of this section, provided that adequate evidence and guarantees are provided that clearly show that the source will cease operating on or before that date.

(4) Extensions. Reasonable extensions of the time provided for installation of monitors may be allowed for sources unable to meet the time-frame prescribed in subsection (1)(b) of this section, provided the owner or operator of such facility demonstrates that good faith efforts have been made to obtain and install such devices within such prescribed time-frame.

(5) Monitoring systems malfunctions. The department may provide a temporary exemption from the monitoring and reporting requirements of this section during any period of monitoring system malfunction, provided that the source owner or operator shows, to the department's satisfaction, that the malfunction was unavoidable and is being repaired as expeditiously as practicable.

(6) Monitoring requirements.

(a) Indirect heat exchangers. Each indirect heat exchanger, except as provided in the following subparagraphs, with an annual average capacity factor of greater than thirty (30) percent as demonstrated to the department by the owner or operator, shall conform with the following monitoring requirements when such facility is subject to an emission standard for the pollutant in question. (Annual average capacity factor means the ratio of the actual annual heat input to the potential annual heat input based on rated capacity).

1. A continuous monitoring system for the measurement of opacity which meets the appropriate performance specification as specified in subsection (7) of this section shall be installed, calibrated, maintained, and operated in accordance with the procedures of this subsection by the owner or operator of any such indirect heat exchanger of greater than 250 million BTU per hour heat input except where: gaseous fuel is the only fuel burned, or oil or a mixture of gas and oil are the only fuels burned and the source is able to comply with the applicable particulate matter and opacity standards without utilization of particulate matter collection equipment, and where the source has never been found, through any administrative or judicial proceedings, to be in violation of any visible emission standard.

2. A continuous monitoring system for the measurement of sulfur dioxide which meets the appropriate performance specifications as specified in subsection (7) of this section shall be installed, calibrated, maintained, and operated on any indirect heat exchangers (except where natural gas or wood waste is burned) of greater than 250 million BTU per hour heat input.

3. A continuous monitoring system for the measurement of the percent oxygen or carbon dioxide which meets the appropriate performance specifications as specified in subsection (7) of this section shall be installed, calibrated, operated, and maintained on indirect heat exchangers where measurements of oxygen or carbon dioxide in the flue gas are required to convert either sulfur dioxide or nitrogen oxides continuous emission monitoring data, or both, to units of the emission standard.

(b) Sulfuric acid plants. For the purposes of this regulation, "sulfuric acid plant" means any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, or acid sludge, but does not include facilities where conversion to sulfuric acid is utilized primarily as a means of preventing emissions to the atmosphere of sulfur dioxide or other sulfur compounds. The owner or operator of each sulfuric acid plant of greater than 200 tons per day production capacity, the production capacity being expressed as 100 percent acid, shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of sulfur dioxide which meets the appropriate performance specifications as specified in subsection (7) of this section for each sulfuric acid producing facility within such plant.

(c) Nitric acid plants. For the purposes of this regulation "nitric acid plant" means any facility producing nitric acid thirty (30) to seventy (70) percent by weight in strength by either the pressure or atmospheric pressure process. The owner or operator of each nitric acid plant of greater than 200 tons per day production capacity, the production capacity being expressed as 100 percent acid, shall install, calibrate, maintain and operate a continuous monitoring system for the measurement of nitrogen oxides which meet the appropriate performance specifications as specified in subsection (7) of this section for each nitric acid producing facility within such plant.

(d) Petroleum refineries. The owner or operator of each affected facility specified in this paragraph shall install, calibrate, maintain and operate continuous monitoring equipment as follows:

1. A continuous monitoring system for the measurement of opacity for catalyst regenerator for fluid bed cracking units of greater than 20,000 barrels per day fresh feed capacity which meets the appropriate performance specifications specified in subsection (7) of this section.

2. A continuous monitoring system for the measurement of sulfur dioxide in the gases discharged into the atmosphere from the combustion of fuel gases subject to 401 KAR 61:145 which meets the appropriate performance specifications specified in subsection (7) of this section (except where a continuous monitoring system for the measurement of hydrogen sulfide is installed under subparagraph 3 [4] of this paragraph). The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 of 40 CFR 60 paragraph 2.1 and for calibration checks shall be sulfur dioxide. The span shall be set at 100 ppm. For conducting monitoring system performance evaluations, Reference Method 6 shall be used.

3. An instrument for continuously monitoring and recording concentrations of hydrogen sulfide in fuel gases burned in any fuel gas combustion device subject to 401 KAR 61:145 which meets the appropriate performance specifications specified in subsection (7) of this section, if compliance is achieved by removing hydrogen sulfide from the fuel gas before it is burned; fuel gas combustion devices having a common source of fuel gas may be monitored at one location, if monitoring at this location accurately represents the concentration of hydrogen sulfide in the fuel gas burned. The span of this continuous monitoring system shall be 300 ppm.

4. An instrument for continuously monitoring and recording concentrations of sulfur dioxide in the gases discharged into the atmosphere from any Claus sulfur recovery plant subject to 401 KAR 61:145 which meets the appropriate performance specifications in subsection (7) of this section, if compliance is achieved through the use of an oxidation control system or a reduction control system followed by incineration. The span of this continuous monitoring system shall be set at 500 ppm.

5. An instrument(s) for continuously monitoring and recording the concentration of hydrogen sulfide and reduced sulfur compounds in the gases discharged into the atmosphere from any Claus sulfur recovery plant subject to 401 KAR 61:145 which meets the appropriate performance specifications specified in subsection (7) of this section, if compliance is achieved through the use of a reduction control system not followed by incineration. The span(s) of this continuous monitoring system shall be set at twenty (20) ppm for monitoring and recording the concentration of hydrogen sulfide and 600 ppm for monitoring and recording the concentration of reduced sulfur compounds.

6. An instrument for continuously monitoring and recording the concentration of sulfur dioxide in gases discharged into the atmosphere from fluid catalytic cracking unit catalyst regenerators subject to 401 KAR 61:145 which meets the appropriate performance specifications specified in subsection (7) of this section. The span of this continuous monitoring system shall be 1,500 ppm.

(e) Incinerators. Each incinerator with a charging capacity of more than forty-five (45) metric tons per day (fifty (50) tons/day) shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of opacity which meets the appropriate performance specifications as specified in subsection (7) of this section.

(f) Each control device with a concentrated discharge associated with the affected facilities subject to 401 KAR 61:070, 401 KAR 61:075, or 401 KAR 61:080 shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of opacity which meets the appropriate performance specifications as specified in subsection (7) of this section.

(7) Except as provided in subsection (8) of this section, all owners or operators which are required to comply with this section shall demonstrate compliance with the following performance specifications of Appendix B to 40 CFR 60.

(a) Continuous monitoring systems for measuring opacity shall comply with Performance Specification 1.

(b) Continuous monitoring systems for measuring sulfur dioxide shall comply with Performance Specification 2.

(c) Continuous monitoring systems for measuring nitrogen oxides shall comply with Performance Specification 2.

(d) Continuous monitoring systems for measuring oxygen shall comply with Performance Specification 3.

(e) Continuous monitoring systems for measuring carbon dioxide shall comply with Performance Specification 3.

(8) An owner or operator who, prior to September 11, 1974, entered into a binding contractual obligation to purchase specific continuous monitoring system components or who installed continuous monitoring equipment prior to October 6, 1975 shall comply with the following requirements:

(a) Continuous monitoring systems for measuring opacity of emissions shall be capable of measuring emission levels within ± twenty (20) percent with a confidence level of ninety-five (95) percent. The Calibration Error Test and associated calculation procedures set forth in Performance Specification 1 of Appendix B to 40 CFR 60 shall be used for demonstrating compliance with this specification;

(b) Continuous monitoring systems for measurement of nitrogen oxides or sulfur dioxide shall be capable of measuring emission levels within ± twenty (20) percent with a confidence level of ninety-five (95) percent. The Calibration Error Test, the Field Test for Accuracy (Relative), and associated operating and calculation procedures set forth in Appendix B to 40 CFR 60 shall be used for demonstrating compliance with this specification;

(c) Owners or operators of all continuous monitoring systems installed on an affected facility prior to October 6, 1975, may be required to conduct tests under paragraphs (a) and/or (b) of this subsection if requested by the department.

(d) All continuous monitoring systems referenced by this subsection shall be upgraded or replaced (if necessary) with new continuous monitoring systems, and the new or improved systems shall be demonstrated to comply with applicable performance specifications within five (5) years of the effective date of this regulation.

(9) Calibration gases. For sulfur dioxide monitoring systems installed on indirect heat exchangers , sulfuric acid plants or petroleum refinery fluid catalyst cracking unit regenerators, the pollutant gas used to prepare calibration gas mixtures (Section 2.1, Performance Specification 2, Appendix B to 40 CFR 60) shall be sulfur dioxide. For nitrogen oxides monitoring systems, installed on nitric acid plants the pollutant gas used to prepare calibration gas mixtures (Section 2.1, Performance Specification 2, Appendix B to 40 CFR 60) shall be nitrogen dioxide. This gas shall also be used for daily checks under subsection (13) of this section as applicable. Span and zero gases certified by their manufacturer to be traceable to National Bureau of Standards reference gases shall be used whenever these reference gases are available. Every six (6) months from dates of manufacture, span and zero gases shall be reanalyzed by conducting triplicate analyses using the reference methods in Appendix A to 40 CFR 60 as follows: for sulfur dioxide, use Reference Method 6, for nitrogen dioxide use Reference Method 7, and for carbon dioxide and oxygen use Reference Method 3.

(10) Cycling times. Cycling times include the total time a monitoring system requires to sample, analyze, and record an emission measurement.

(a) Continuous monitoring systems for measuring opacity shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive ten (10) second period.

(b) Continuous monitoring systems for measuring oxides of nitrogen, carbon dioxide, oxygen, or sulfur dioxide shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive fifteen (15) minute period.

(11) Monitor location. A continuous monitoring device shall be installed such that representative measurements of emissions or process parameters (i.e., oxygen or carbon dioxide) from the affected facility are obtained. Additional guidance for location of continuous monitoring systems to obtain representative samples are contained in the applicable Performance Specifications of Appendix B of 40 CFR 60.

(12) Combined effluents. When the effluents from two or more affected facilities of similar design and operating characteristics are combined before being released to the atmosphere, the department may allow monitoring systems to be installed on the combined effluent. When the affected facilities are not of similar design and operating characteristics, or when the effluent from one affected facility is released to the atmosphere through more than one point, the department shall establish alternate procedures to implement the intent of these requirements.

(13) Zero and span drift. Owners or operators of all continuous monitoring systems installed in accordance with the requirements of this subsection shall record the zero and span drift in accordance with the method prescribed by the manufacturer of such instruments; to subject the instruments to the manufacturer's recommended zero and span check at least once daily unless the manufacturer has recommended adjustments at shorter intervals, in which case the recommendations shall be followed; to adjust the zero and span whenever the twenty-four (24) hour zero drift or twenty-four (24) hour calibration drift limits of the applicable performance specifications in Appendix B of 40 CFR 60 are exceeded; and to adjust continuous monitoring systems referenced by subsection (8) of this section whenever the twenty-four (24) hour zero drift or twenty-four (24) hour calibration drift exceeds ten (10) percent of the emission standard.

(14) Span. Instrument span should be approximately 200 percent of the expected instrument data display output corresponding to the emission standard of the source.

(15) Alternate procedures and requirements. The department may allow equivalent procedures and requirements that have been approved by the U.S. Environmental Protection Agency for continuous monitoring systems as follows:

(a) Alternate monitoring requirements to accommodate continuous monitoring systems that require corrections for stack moisture conditions (e.g., an instrument measuring sulfur dioxide emissions on a wet basis could be used with an instrument measuring oxygen concentration on a dry basis if acceptable methods of measuring stack moisture conditions are used to allow accurate adjustments of the measured sulfur dioxide concentration to a dry basis).

(b) Alternate locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate to the satisfaction of the department that installation at alternate locations will enable accurate and representative measurements.

(c) Alternative procedures for performing calibration checks (e.g., some instruments may demonstrate superior drift characteristics that require checking at less frequent intervals).

(d) Alternative monitoring requirements when the effluent from two or more identical affected facilities is released to the atmosphere through more than one point (e.g., an extractive, gaseous monitoring system used at several points may be approved if the procedures recommended are suitable for generating accurate emission averages).

(e) Alternate continuous monitoring systems that do not meet the spectral response requirements in Performance Specification 1, Appendix B of 40 CFR 60, but adequately demonstrate a definite and consistent relationship between their measurements and the opacity measurements of a system complying with the requirements in Performance Specification 1. The department may require that such demonstration be performed for each affected facility.

(16) Minimum data requirements. The following paragraphs set forth the minimum data reporting requirements. Both a printed summary and computer tape or cards shall be furnished in the format specified by the Division.

(a) Owners or operators of facilities required to install continuous monitoring systems shall submit for every calender quarter, a written report of excess emissions and the nature and cause of the excess emissions if known. The averaging period used for data reporting should correspond to the averaging period specified in the emission test method used to determine compliance with an emission standard for the pollutant/source category in question. The required report shall include, as a minimum, the data stipulated in this subsection. All quarterly reports shall be postmarked by the thirtieth (30th) day following the end of each calender quarter.

(b) For opacity measurements, the summary shall consist of the magnitude in actual percent opacity of six-minute averages of opacity greater than the opacity standard in the applicable standard for each hour of operation of the facility. Average values may be obtained by integration over the averaging period or by arithmetically averaging a minimum of four equally spaced, instantaneous opacity measurements per minute. Any time period exempted shall be considered before determining the excess average of opacity (e.g., whenever a regulation allows two minutes of opacity measurements in excess of the standard, the source shall report all opacity averages, in any one hour, in excess of the standard, minus the two-minute exemption). If more than one opacity standard applies, excess emissions data must be submitted in relation to all such standards. Opacity data need be reported on computer cards or tape only.

(c) For gaseous measurements the summary shall consist of hourly averages in the units of the applicable standard. The hourly averages shall not appear in the written summary, but shall be made available from the computer tape or cards.

(d) The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustments shall be reported. Proof of continuous monitoring system performance whenever system repairs or adjustments have been made is required.

(e) When no excess emissions have occurred and the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be included in the report.

(f) Owners or operators of affected facilities shall maintain a file of all information reported in the quarterly summaries, and all other data collected either by the continuous monitoring system or as necessary to convert monitoring data to the units of the applicable standard for a minimum of two years from the date of collection of such data or submission of such summaries.

(17) Owners or operators of affected facilities shall use the following procedures for converting monitoring data to units of the standard where necessary.

(a) For indirect heat exchangers the following procedures shall be used to convert gaseous emission monitoring data in parts per million to g/million cal (lb/million BTU) where necessary:

1. When the owner or operator of an indirect heat exchanger elects under subsection (6)(a)3 of this section to measure oxygen in the flue gases, the measurements of the pollutant concentration and oxygen concentration shall each be on a dry basis and Equation I of the conversion procedures in Appendix A to this regulation shall be used.

2. When the owner or operator elects under subsection (6)(a)3 of this section to measure carbon dioxide in the flue gases, the measurement of the pollutant concentration and the carbon dioxide concentration shall each be on a consistent basis (wet or dry) and Equation II of the conversion procedures in Appendix A to this regulation shall be used.

(b) For sulfuric acid plants the owner or operator shall:

1. Establish a conversion factor three times daily according to the procedures in 401 KAR 59:035, Section 5(2);

2. Multiply the conversion factor by the average sulfur dioxide concentration in the flue gases to obtain average sulfur dioxide emissions in kg/metric ton (lb/short ton); and

3. Report the average sulfur dioxide emission for each averaging period in excess of the applicable emission standard in the quarterly summary.

(c) The department may allow data reporting or reduction procedures varying from those set forth in this section if the owner or operator of a source shows to the satisfaction of the department that his procedures are at least as accurate as those in this section. Such procedures may include but are not limited to the following:

1. Alternative procedures for computing emission averages that do not require integration of data (e.g., some facilities may demonstrate that the variability of their emissions is sufficiently small to allow accurate reduction of data based upon computing averages from equally spaced data points over the averaging period).

2. Alternative methods of converting pollutant concentration measurements to the units of the emission standards.

(18) Special consideration. The department may provide for approval, on a case-by-case basis, of alternative monitoring requirements different from the provisions of this section if the provisions of this section (i.e., the installation of a continuous emission monitoring system) cannot be implemented by a source due to physical plant limitations or extreme economic reasons. In such cases, when the department exempts any source subject to this section by use of this provision from installing continuous emission monitoring systems, the department shall set forth alternative emission monitoring and reporting requirements (e.g., periodic manual stack tests) to satisfy the intent of these regulations. Examples of such special cases include, but are not limited to, the following:

(a) Alternate monitoring requirements may be prescribed when installation of a continuous monitoring system or monitoring device specified by this section would not provide accurate determinations of emissions.

(b) Alternate monitoring requirements may be prescribed when the affected facility is infrequently operated.

(c) Alternative monitoring requirements may be prescribed when the department deems that the requirements of this section would impose an extreme economic burden on the source owner or operator. The burden of proof for an alleged "economic burden" is to be borne by the source.

(d) Alternative monitoring requirements may be prescribed when the department deems that monitoring systems prescribed by this section cannot be installed due to physical limitations at the facility.

APPENDIX A TO 401 KAR 61:005
CONVERSION PROCEDURES

Equation I.
$$E = \frac{CF\ (20.9)}{(20.9 - \%\ O_2)}$$

Equation II.
$$E = \frac{C\ F_c\ \ (100)}{\%\ CO_2}$$

E = pollutant emission, g/million cal (lb/million BTU).

C = pollutant concentration, g/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each hourly period by 4.16 X 10^{-5} M g/dscm per ppm (2.64 X 10^{-9} M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64 for sulfur dioxide and 46 for oxides of nitrogen.

$\%O_2$, $\%CO_2$ = Oxygen or carbon dioxide volume (expressed as percent) determined with equipment specified under Section 3(6)(a)3.

F, Fc= a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of carbon dioxide generated to the calorific value of the fuel combusted (Fc) respectively. Values of F and Fc are given in 401 KAR 59:015 as applicable.

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401 KAR 61:010. Existing incinerators.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which means each incinerator with a capacity of 2.5 cubic feet or greater commenced before the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Incinerator" means any furnace and appurtenances thereto used in the process of burning waste for the primary purpose of removing the combustible matter from the waste.

(2) "Auxiliary fuel" means a substance burned in an incinerator to supply additional heat to attain temperature sufficiently high to dry and ignite the waste and to maintain ignition of the waste.

(3) "Classification date" means:

(a) August 17, 1971 for incinerators with a charging rate of more than fifty (50) tons/day.

(b) April 9, 1972 for incinerators with a charging rate of fifty (50) tons/day or less.

Section 3. Standard for Particulate Matter.

(1) No person shall cause, suffer, allow, or permit the emission produced by the incineration of any substance other than sawdust, wood chips, or bark which:

(a) Is greater than twenty (20) percent opacity; or

(b) For those incinerators with charging rate greater than or equal to 500 lb/hr, exceeds 0.20 grains of particulate matter per standard cubic foot of dry flue gas corrected to twelve (12) percent carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.

(2) No person shall cause, suffer, allow, or permit the emission produced by the incineration of sawdust, wood chips, or bark which:

(a) Is equal to or greater than forty (40) percent opacity (for the purposes of 401 KAR 50:055, Section 2(4) and (5), thirty (30) consecutive minutes shall be allowed for startup and thirty (30) consecutive minutes shall be allowed for shutdown); or

(b) Exceeds 0.21 grains of particulate matter per standard cubic foot of dry flue gas corrected to twelve (12) percent carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.

Section 4. Monitoring of Operations. The owner or operator of any incinerator of more than forty-five (45) metric tons per day charging rate (fifty (50) tons per day) subject to the provisions of this regulation shall record the daily charging rates and hours of operation.

Section 5. Test Methods and Procedures.

(1) Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Section 3 shall be conducted according to the following methods (filed by reference in 401 KAR 50:015):

(a) Kentucky Method 50 for the concentration of particulate matter and the associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis and calculation of excess air using the integrated sample technique.

(2) For Kentucky Method 50 the sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 0.85 dscm (30.0 dscf) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the Department.

(3) If a wet scrubber is used, the gas analysis sample shall reflect flue gas conditions after the scrubber, allowing for carbon dioxide absorption by sampling the gas on the scrubber inlet and outlet sides according to either the procedure under paragraphs (a) to (c) of this subsection or the procedure under paragraphs (a), (b) and (f) of this subsection as follows:

(a) The outlet sampling site shall be the same as for the particulate matter measurement. The inlet site shall be selected according to Reference Method 1, or as specified by the Department.

(b) Randomly select nine (9) sampling points within the cross-section at both the inlet and outlet sampling sites. Use the first set of three for the first run, the second set for the second run, and the third set for the third run.

(c) Simultaneously with each particulate matter run, extract and analyze for CO2 an integrated gas sample according to Reference Method 3, traversing the three sample points and sampling at each point for equal increments of time. Conduct the runs at both inlet and outlet sampling sites.

(d) Measure the volumetric flow rate at the inlet during each particulate matter run according to Reference Method 2, using the full number of traverse points. For the inlet make two (2) full velocity traverses approximately one (1) hour apart during each run and average the results. The outlet volumetric flow rate may be determined from the particulate matter run (Reference Method 5).

(e) Calculate the adjusted CO2 percentage using the equation in Appendix A to this regulation.

(f) Alternatively, the following procedures may be substituted for the procedures under paragraphs (c), (d) and (e) of this subsection:

1. Simultaneously with each particulate matter run, extract and analyze for carbon dioxide, oxygen and nitrogen an integrated gas sample according to Reference Method 3, traversing the three (3) sample points and sampling for equal increments of time at each point. Conduct the runs at both the inlet and outlet sampling sites.

2. After completing the analysis of the gas sample, calculate the percentage of excess air (%EA) for both the inlet and outlet sampling sites using Equation 3-1 in Reference Method 3.

3. Calculate the adjusted CO2 percentage using the equation in Appendix B to this regulation.

4. Particulate matter emissions expressed in g/dscm, shall be corrected to twelve (12) percent CO2 by using the equation in Appendix C to this regulation.

APPENDIX A TO 401 KAR 61:010
EQUATION FOR ADJUSTED CO_2 PERCENTAGE

$$(\% \; CO_2)\,adj = (\% \; CO_2)di \; (Qdi/Qdo)$$

Where:

$(\% \; CO_2)$ adj	is the adjusted CO_2 percentage which removed the effect of CO_2 absorption and diffision of air;
$(\% \; CO_2)$ di	is the percentage of CO_2 measured before the scrubber, dry basis;
Qdi	is the volumetric flow rate before the scrubber, average of two runs, dscf/min, using Reference Method 2; and
Qdo	is the volumetric flow rate after the scrubber, dscf/min, using Reference Methods 2 and 5.

APPENDIX B TO 401 KAR 61:010
EQUATION FOR ADJUSTED CO_2 PERCENTAGE

$$(\%\ CO_2)adj = (\%\ CO_2)di\ \frac{100 + (\%EA)i}{100 + (\%EA)o}$$

Where:

$(\%\ CO_2)adj$ is the adjusted outlet CO_2 percentage;

$(\%\ CO_2)di$ is the percentage of CO_2 measured before the scrubber, dry basis;

$(\%EA)i$ is the percentage of excess air at the inlet; and

$(\%EA)o$ is the percentage of excess air at the outlet.

APPENDIX C TO 401 KAR 61:010
EQUATION FOR CORRECTING PARTICULATE MATTER EMISSIONS

$$C_{12} = \frac{12c}{\%CO_2}$$

Where:

C_{12} is the concentration of particulate matter corrected to twelve percent CO_2;

C is the concentration of particulate matter as measured by Reference Method 5;

$\%CO_2$ is the percentage of CO_2 as measured by Reference Method 3, or when applicable, the adjusted outlet CO_2 percentage as determined by Section 5(3)(c).

401 KAR 61:015. Existing indirect heat exchangers.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the applicable classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010 and 401 KAR 50:025.

(1) "Affected facility" means an indirect heat exchanger having a heat input capacity of more than one (1) million BTU per hour.

(2) "Indirect heat exchanger" means any piece of equipment, apparatus, or contrivance used for the combustion of fuel in which the energy produced is transferred to its point of usage through a medium that does not come in contact with or add to the products of combustion.

(3) "Classification date" means:

(a) August 17, 1971, for affected facilities with a capacity of more than 250 million BTU per hour heat input;

(b) April 9, 1972, for affected facilities with a capacity of 250 million BTU per hour heat input or less.

Section 3. Method for Determining Allowable Emission Rates.

(1) Except as provided in subsection (3) of this section, the total rated heat input capacity of all affected facilities, commenced before the applicable classification date within a source shall be used as specified in Sections 4 and 5 to determine the allowable emission in terms of pounds of effluent per million BTU heat input.

(2) At such time as any affected facility is assigned an allowable emission rate by the department, at no time thereafter shall that rate be changed due to inclusion or shutdown of any affected facility at the source.

(3)(a) A source may petition the department to establish an allowable emission rate which may be apportioned without regard to individual affected facility heat input provided that the conditions specified in paragraphs (b), (c), (d), and (e) of this subsection are met. Such allowable emission rate shall be determined according to the following equation:

$$F = (AB + DE)/C$$

Where:

A = the allowable emission rate (in pounds per million BTU input), as determined according to 401 KAR 59:015, Section 3(1);

B = the total rated heat input (in millions of BTU per hour) of all affected facilities commenced on or after the applicable classification date within a source, including those for which an application to construct, modify, or reconstruct has been submitted to the department;

C = the total rated heat input (in millions of BTU per hour) of all affected facilities within a source, including those for which an application to construct, modify, or reconstruct has been submitted to the department;

D = the total emission rate (in pounds per million BTU input) as determined according to subsection (1) of this section;

E = the total rated heat input (in millions of BTU per hour) of all affected facilities commenced before the applicable classification date;

F = the alternate allowable emission rate (in pounds per actual million BTU input).

(b) At no time shall the owner or operator of the source allow the total emissions (in pounds per hour) from all affected facilities within the source divided by the total actual heat input (in millions of BTU per hour) of all affected facilities within the source to exceed the alternate allowable emission rate as determined by paragraph (a) of this subsection.

(c) At no time shall the owner or operator of any source subject to federal new source performance standards allow the emissions from any affected facility commenced on or after the applicable classification date to exceed the allowable emission rate determined by use of that affected facility's rated heat input (instead of the heat input as determined by subsection (1) of this section) as specified in 401 KAR 59:015, Sections 4 and 5.

(d) The owner or operator of the source must demonstrate compliance with this subsection by conducting a performance test according to 401 KAR 50:045 on each affected facility under such conditions as may be specified by the department.

(e) Upon petition, the department will establish an alternate emission rate in accordance with this subsection if the owner or operator demonstrates to the department's satisfaction that the source will maintain compliance with this subsection on a continual basis.

Section 4. Standard for Particulate Matter. Except as provided for in Section 3(3), no owner or operator of an affected facility subject to the provisions of this regulation shall cause to be discharged into the atmosphere from that affected facility:

(1) Particulate matter in excess of that specified in Appendix A of this regulation;

(2) Emissions which exhibit greater than twenty (20) percent opacity in regions classified as Priority I with respect to particulate matter, except:

(a) That, for cyclone or pulverized fired indirect heat exchangers, a maximum of forty (40) percent opacity shall be permissible for not more than two (2) consecutive minutes in any sixty (60) consecutive minutes;

(b) That, for stoker fired indirect heat exchangers, a maximum of forty (40) percent opacity shall be permissible for not more than six (6) consecutive minutes in any sixty (60) consecutive minutes during cleaning the fire box or blowing soot and, for indirect heat exchangers with stationary grates, a maximum of forty (40) percent opacity shall be permissible during cleaning of the grates for not more than three (3) consecutive minutes in any sixty (60) consecutive minutes for each section of grates that are cleaned;

(c) For emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.

(3) Emissions which exhibit greater than forty (40) percent opacity in regions classified as Priority II or III with respect to particulate matter except:

(a) That, for cyclone or pulverized fired indirect heat exchangers, a maximum of sixty (60) percent opacity shall be permissible for not more than two (2) consecutive minutes in any sixty (60) consecutive minutes;

(b) That, for stoker fired indirect heat exchangers, a maximum of sixty (60) percent opacity shall be permissible for not more than six (6) consecutive minutes in any sixty (60) consecutive minutes during cleaning the fire box or blowing soot and, for indirect heat exchangers with stationary grates, a maximum of sixty (60) percent opacity shall be permissible during cleaning of the grates for not more than three (3) consecutive minutes in any sixty (60) consecutive minutes for each section of grates that are cleaned;

(c) For emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.

(4) The emission limitations contained in other subsections of this section shall not apply to any affected facility (with more than 250 million BTU per hour heat input capacity which was in being or under construction before August 17, 1971, or any affected facility with 250 million BTU per hour capacity or less which was in being or under construction

prior to April 9, 1972) if that affected facility was in compliance prior to April 9, 1972, with, or has a valid permit to operate within the provisions of the previous Kentucky Air Pollution Control Commission Regulation No. 7 entitled "Prevention and Control of Emissions of Particulate Matter from Combustion of Fuel in Indirect Heat Exchangers." These affected facilities shall comply with the emission limitations in that regulation except that replacement of the particulate emissions control device associated with the affected facility shall subject it to the standard contained in this section.

Section 5. Standard for Sulfur Dioxide.

(1) Except as provided for in Section 3(3), no owner or operator of an affected facility subject to the provisions of this regulation shall cause to be discharged into the atmosphere from that affected facility, any gases which contain sulfur dioxide in excess of that specified in Appendix B of this regulation.

(2) When different fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the following formula:

$$\text{Allowable Sulfur Dioxide Emission, lb/MM BTU} = \frac{y\ (a) + z\ (b)}{y + z}$$

Where:

y is the percent of total heat input derived from liquid or gaseous fuel;

z is the percent of total heat input derived from solid fuel;

a is the allowable sulfur dioxide emission in pounds per million BTU heat input derived from liquid or gaseous fuel; and

b is the allowable sulfur dioxide emissions in pounds per million BTU heat input derived from solid fuel.

(3) Compliance shall be based on the total heat input from all fuels burned, including gaseous fuels.

(4) In counties classified as VA with respect to sulfur dioxide, for sources having a total heat input greater than fifteen hundred million BTU per hour (1500 MMBTU/hr.) as determined by Section 3(1) of this regulation, no owner or operator shall allow the annual average sulfur dioxide emission rate from all existing and new affected facilities combined at the source to exceed 0.60 pounds per million BTU.

Section 6. Monitoring of Operations.

(1) The sulfur content of solid fuels, as burned, shall be determined in accordance with the methods specified by the department.

(2) The sulfur content of liquid fuels, as burned, shall be determined in accordance with the methods specified by the department.

(3) The rate of fuel burned for each fuel shall be measured daily or at shorter intervals and recorded. The heating value and ash content of fuels shall be ascertained at least once per week and recorded. Where the indirect heat exchanger is used to generate electricity, the average electrical output and the minimum and maximum hourly generation rate shall be measured and recorded daily.

(4) The owner or operator of any indirect heat exchanger of more than 250 million BTU per hour heat input subject to the provisions of this regulation shall maintain a file of all measurements required by this regulation and summarized monthly. The record of any such measurement(s) and summary shall be retained for at least two (2) years following the date of such measurements and summaries.

(5) The department may require for any indirect heat exchanger of less than 250 million BTU per hour heat input any or all the fuel monitoring required by this section.

(6) For an indirect heat exchanger that does not use a flue gas desulfurization device, a continuous monitoring system as specified in 401 KAR 61:005 for measuring sulfur dioxide emissions is not required if the owner or operator monitors such emissions by fuel sampling and analysis pursuant to Section 6(6) of 401 KAR 59:015.

Section 7. Test Methods and Procedures.

(1) Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Section 4 and 5 shall be conducted according to the following methods (filed by reference in 401 KAR 50:015):

(a) Reference Method 1 for the selection of sampling site and sample traverses.

(b) Reference Method 3 for gas analysis to be used when applying Reference Methods 5, 6 and 7

(c) Reference Method 5 for the concentration of particulate matter and the associated moisture content.

(d) Reference Method 6 for the concentration of sulfur dioxide and

(e) Reference Method 7 for the concentration of nitrogen oxides.

(2) For Reference Method 5, Reference Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least sixty (60) minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller sampling times or volumes, when necessitated by process variables or other factors, may be approved by the department. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature no greater than 160°C (320°F)

(3) For Reference Methods 6 and 7, the sampling site shall be the same as that selected for Reference Method 5. The sampling point in the duct shall be at the centroid of the cross section or at a point no closer to the walls than one (1) m (3.28 ft). For Reference Method 6, the sample shall be extracted at a rate proportional to the gas velocity at the sampling point.

(4) For Reference Method 6, the minimum sampling time shall be twenty (20) minutes and the minimum sampling volume shall be 0.02 dscm (0.71 dscf) for each sample. The arithmetic mean of two samples shall constitute one run. Samples shall be taken at approximately thirty (30) minute intervals.

(5) For Reference Method 7, each run shall consist of at least four grab samples taken at approximately fifteen (15) minute intervals. The arithmetic mean of the samples shall constitute the run value.

(6) For each run using the methods specified by subsection (1)(c), (d), and (e) of this section, the emissions expressed in g/million cal (lb/million BTU) shall be determined by the following equation:

$$E = CF \frac{20.9}{20.9 - \%O_2}$$

Where:

E = pollutant emission g/million cal (lb/million BTU).

C = pollutant concentration, g/dscm (lb/dscf) determined by [Kentucky Method 50 and] Reference Method 5, 6 or 7.

F = a factor as determined in 401 KAR 59:015, Section 7.

%02 = oxygen content by volume (expressed as percent), dry basis. Percent oxygen shall be determined by using the integrated or grab sampling and analysis procedures for Reference Method 3 as applicable. The sample shall be obtained as follows:

1. For determination of sulfur dioxide and nitrogen oxides emissions, the oxygen sample shall be obtained simultaneously at the same point for Reference Method 6 and 7 determinations, respectively. For Reference Method 7, the oxygen sample shall be obtained using the grab sampling and analysis procedures for Reference Method 3.

2. For determination of particulate emissions, the oxygen sample shall be obtained simultaneously by traversing the duct at the sample sampling location used for each run of Reference Method 5 under subsection (2) of this section . Reference Method 1 shall be used for selection of the number of traverse points except that no more than twelve (12) sample points are required.

(7) When combinations of fossil fuels are fired, the heat input, expressed in cal/hr (BTU/hr), shall be determined during each testing period by multiplying the gross calorific value of each fuel fired by the rate of each fuel burned. Gross calorific value shall be determined in accordance with A.S.T.M. methods D2015-66(72) (solid fuels). D240-64(73) (liquid fuels), or D1826-64(70) (gaseous fuels), as applicable (A.S.T.M. designations filed by reference in 401 KAR 50:015). The rate of fuels burned during each testing period shall be determined by suitable methods and shall be confirmed by a material balance over the steam generation system.

Section 8. Compliance Timetable.

(1) Affected facilities located in areas designated as attainment for sulfur dioxide and/or particulate matter shall be in compliance on the effective date of this regulation.

(2)(a) In class I counties designated as non-attainment for sulfur dioxide, the owner or operator of any affected facility in any source whose total rated capacity is sixteen thousand million BTU per hour (16,000 MM BTU/hr) or more shall be required to complete the following:

1. Submit a final control plan for achieving compliance with this regulation no later than May 1, 1978;

2. Award contracts for complying coal by January 1, 1979 ;

3. Initiate use of such complying coal on or before December 1, 1979;

4. Demonstrate compliance by performance tests on or before October 1, 1981;

(b) In class IVA counties designated as non-attainment for sulfur dioxide, the owner or operator of any affected facility in any source with a total rated capacity of greater than fifteen hundred million BTU per hour (1500 MM BTU/hr) but less than twenty-one thousand million BTU per hour (21,000 MM BTU/hr) shall be required to complete the following:

1. Submit a final control plan for achieving compliance with this regulation no later than May 1, 1979;
2. Award contracts for complying coal by August 1, 1979;
3. Initiate use of such complying coal on or before January 1, 1980;
4. Demonstrate compliance by performance tests on or before March 1, 1980;

(c) In class IVA counties designated as non-attainment for sulfur dioxide, the owner or operator of any affected facility in any source with a total rated capacity of greater than twenty-one thousand million BTU per hour (21,000 MM BTU/hr) shall be required to complete the following:

1. Submit a control plan for flue gas desulfurization and initate construction of a coal washing plant on or before June 1, 1978;
2. Issue invitations for bids for construction and installation of flue gas desulfurization equipment on or before October 1, 1978;
3. Award contract for construction and installation of flue gas desulfurization equipment on or before March 1, 1979;
4. Initiate construction of flue gas desulfurization equipment on or before December 1, 1979;
5. Complete construction of coal washing plant on or before December 1, 1980.
6. Complete construction of flue gas desulfurization equipment on or before June 1, 1982.
7. Demonstrate compliance by performance tests on or before September 1, 1982.

(d) The owner or operator of any affected facility located in any area designated non-attainment for sulfur dioxide and/or particulate matter, except as provided for in paragraphs (a),(b) and (c) of this subsection, shall demonstrate compliance with this regulation as expeditiously as practicable but in no case later than December 31, 1982.

APPENDIX A TO 401 KAR 61:015
ALLOWABLE PARTICULATE EMISSION RATES

For sources having a Total Heat Input Capacity (as determined by Section 3(1) of this regulation) of: (MM BTU/hr)	The standard (in pounds per million BTU actual heat input) is (based upon the Priority classification with respect to particulates of the Region in which the source is located): Priority I	Priority II	Priority III
10 or less	0.56	0.75	0.80
50	0.38	0.52	0.57
100	0.33	0.44	0.49
250	0.26	0.35	0.40
500	0.22	0.30	0.34
1000	0.19	0.26	0.30
2500	0.15	0.21	0.24
5000	0.13	0.18	0.21
7500	0.12	0.16	0.19
10000 or more	0.11	0.15	0.18

Interpolation of allowable emissions for intermediate heat input values not specified above may be accomplished by use of the equations shown below for the appropriate heat input range specified. In all equations X = millions of BTU per hour heat input as determined by Section 3(1) of this regulation, and Y = allowable particulate emissions in pounds per million BTU actual heat input.

Region Classification with respect to Particulate Matter	Range (MM BTU/Hr)	Allowable (Pounds/MM BTU)
Priority I	10 to 10,000	$Y = 0.9634 X^{-0.2356}$
Priority II	10 to 10,000	$Y = 1.2825 X^{-0.2330}$
Priority III	10 to 10,000	$Y = 1.3152 X^{-0.2159}$

APPENDIX B
TO
401 KAR 61:015
ALLOWABLE SULFUR DIOXIDE EMISSION RATES

For sources having a total heat input (as determined by Section 3(1) of this regulation) of:	The standard (in pounds per million BTU actual heat input) is (based upon the classification with respect to sulfur dioxide of the county in which the source is located):													
	CLASS I		CLASS II		CLASS III		CLASS IV		CLASS IVA		CLASS V		CLASS VA	
(MM BTU/Hr.)	Liquid/Gaseous Fuel	Solid Fuel	Liquid/Gaseous Fuel	Solid Fuel	Liquid/Gaseous Fuel	Solid Fuel	Liquid/Gaseous Fuel	Solid Fuel	Liquid/Gaseous Fuel	Solid Fuel	Liquid/Gaseous Fuel	Solid Fuel	Liquid/Gaseous Fuel	Soli Fue
10 or less	3.0	5.0	4.0	6.0	4.6	7.0	5.4	8.0	5.4	8.0	6.0	9.0	6.0	9.0
50	1.5	2.4	2.4	3.7	3.2	4.8	4.3	6.4	4.3	6.4	4.9	7.3	4.9	7.3
100	1.2	1.8	2.0	3.0	2.7	4.1	4.0	5.9	4.0	5.9	4.5	6.7	4.5	6.7
150	1.0	1.5	1.8	2.7	2.5	3.7	3.7	5.6	3.7	5.6	4.3	6.4	4.3	6.4
200	0.9	1.3	1.6	2.5	2.3	3.5	3.6	5.4	3.6	5.4	4.1	6.2	4.1	6.2
250-1500	0.8	1.2	1.5	2.3	2.2	3.3	3.5	5.2	3.5	5.2	4.0	6.0	4.0	6.0
greater than 1500 but less than 21,000	0.8	1.2	1.5	2.3	2.2	3.3	3.5	5.2	2.3 [2.1]	3.5 [3.1]	4.0	6.0	1.1 [0.4]	1.1 [0.6
21,000 or more	0.8	1.2	1.5	2.3	2.2	3.3	3.5	5.2	2.1	3.1	4.0	6.0	1.1	1.1

Interpolation of allowable emissions for rated capacity values between 10 and 250 million BTU heat input may be accomplished by use of the equations shown below for the appropriate fuel specified. In all equations Y = allowable sulfur dioxide emission in pounds per million BTU actual heat input, X = millions of BTU per hour heat input capacity rating a determined by Section 3(1) of this regulation.

COUNTY CLASS	FUEL	ALLOWABLE (POUNDS/MM BTU)
I	Liquid/Gaseous	$Y = 7.7223 X^{-0.4106}$
	Solid	$Y = 13.8781 X^{-0.4434}$
II	Liquid/Gaseous	$Y = 8.0681 X^{-0.3047}$
	Solid	$Y = 11.9134 X^{-0.2979}$
III	Liquid/Gaseous	$Y = 7.7966 X^{-0.2291}$
	Solid	$Y = 11.9872 X^{-0.2336}$
IV	Liquid/Gaseous	$Y = 7.3639 X^{-0.1347}$
	Solid	$Y = 10.8875 X^{-0.1338}$
IVA	Liquid/Gaseous	$Y = 7.3639 X^{-0.1347}$
	Solid	$Y = 10.8875 X^{-0.1338}$
V	Liquid/Gaseous	$Y = 8.0189 X^{-0.1260}$
	Solid	$Y = 12.0284 X^{-0.1260}$
VA	Liquid/Gaseous	$Y = 7.7223 X^{-0.4106}$
	Solid	$Y = 13.8781 X^{-0.4434}$

401 KAR 61:020. Existing process operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates in this chapter, commenced before the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Process operation" means any method, form, action, operation or treatment of manufacturing or processing, and shall include any storage or handling of materials or products, before, during, or after manufacturing or processing.

(2) "Process weight" means the total weight of all materials introduced into any affected facility which may cause any emission of particulate matter, but does not include liquid and gaseous fuels charged, combustion air, or uncombined water.

(3) "Classification date" means July 2, 1975.

(4) "Process weight rate" means a rate established as follows:

(a) For continuous or long-run steady state operations, the total process weight for the entire period of continuous operation or for a typical portion thereof, divided by the number of hours of such period or portion thereof;

(b) For cyclical or batch unit operations, or unit processes, the total process weight for a period that covers a complete operation or an integral number of cycles, divided by the hours of actual process operation during such a period; and

(c) Where the nature of any process operation or the design of any equipment is such as to permit more than one interpretation of this definition, the interpretation which results in the minimum value for allowable emission shall apply.

(5) "Affected facility" as related to process operations means the last operation preceeding the emission of air contaminants which results:

(a) In the separation of the air contaminant from the process materials; or

(b) In the conversion of the process materials into air contaminants, but does not include an air pollution abatement operation.

Section 3. Standard for Particulate Matter.

(1) No person shall cause, suffer, allow or permit the emission into the open air of particulate matter from any affected facility, or from all air pollution control equipment installed on any affected facility which:

(a) Is equal to or greater than forty (40) percent opacity; or

(b) Is in excess of the quantity specified in Appendix A of this regulation.

(2) An affected facility may elect to substitute the following standards in lieu of the value given in Appendix A.

(a) A maximum exit particulate emission concentration of 0.02 grains per standard cubic foot;

(b) Air pollution control equipment of at least ninety-seven (97) percent actual efficiency;

(c) Addition of dilution air shall not constitute compliance; and

(d) At least ninety (90) percent of the particulate emissions from the affected facility must be vented to the control device.

Section 4. Test Methods and Procedures. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Section 3 shall be conducted according to the following methods (filed by reference in 401 KAR 50:015):

(1) Kentucky Method 50 for sources located in or having a significant impact upon non-attainment areas for total suspended particulates as designated in 401 KAR 51:010, and Reference Method 5 for sources located in all other areas, for the emission rates of particulate matter and the associated moisture content.

(2) Reference Method 1 for sample and velocity traverses.

(3) Reference Method 2 for velocity and volumetric flow rate.

(4) Reference Method 3 for gas analysis.

(5) Reference Method 9 for visible emissions.

(6) For Kentucky Method 50 and Reference Method 5, Reference Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 0.85 dscm (thirty (30) dscf) except that smaller sampling time or volumes, when necessitated by process variables or other factors, may be approved by the Department

APPENDIX A TO 401 KAR 61:020
ALLOWABLE RATE OF PARTICULATE EMISSION
BASED ON PROCESS WEIGHT RATE

Process Weight Rate		Maximum Allowable Emission Rate
Lb/Hr.	Tons/Hr.	Lb/Hr.
100 or less	0.05 or less	0.551
200	0.10	0.877
400	0.20	1.40
600	0.30	1.83
800	0.40	2.22
1000	0.50	2.58
1500	0.75	3.38
2000	1.00	4.10
2500	1.25	4.76
3000	1.50	5.38
3500	1.75	5.96
4000	2.00	6.52
5000	2.50	7.58
6000	3.00	8.56
7000	3.50	9.49
8000	4.00	10.4
9000	4.50	11.2
10000	5.00	12.0
12000	6.00	13.6
16000	8.00	16.5
18000	9.00	17.9
20000	10.00	19.2
30000	15.00	25.2
40000	20.00	30.5
50000	25.00	35.4
60000	30.00	40.0
70000	35.00	41.3
80000	40.00	42.5
90000	45.00	43.6
100000	50.00	44.6
120000	60.00	46.3
140000	70.00	47.8
160000	80.00	49.1
200000	100.00	51.3
1000000	500.00	69.0
2000000	1000.00	77.6
6000000	3000.00	92.7

Interpolation of the data for process weight rates up to 60,000 lb/hr shall be accomplished by use of the equation $E = 4.10P^{0.67}$ and interpolation and extrapolation of the data for process weight rates in excess of 60,000 lb/hr. shall be accomplished by use of the equation $E = 55.0P^{0.11}-40$, where E = rate of emission in lb/hr. and P = process weight rate in tons/hour.

401 KAR 61:025. Existing kraft (sulfate) pulp mills.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which:

(1) Is associated with a kraft (sulfate) pulp mill;

(2) Is not subject to another standard of performance within this chapter with respect to particulates or total reduced sulfur;

(3) Commenced before the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Total reduced sulfur (TRS)" means all reduced sulfur compounds including but not limited to hydrogen sulfide, methyl mercaptan, dimethyl sulfide and dimethyl disulfide expressed in terms of hydrogen sulfide.

(2) "Classification date" means April 9, 1972.

Section 3. Standard for Particulate Matter. No person shall cause, suffer, allow or permit particulate emissions from the following affected facilities in excess of:

(1) Recovery furnace: 3.5 pounds per ton of equivalent unbleached air dried pulp produced;

(2) Lime kilns: 1.0 pounds per ton of equivalent unbleached air dried pulp produced;

(3) Dissolving smelt tanks: 0.5 pounds per ton of equivalent unbleached air dried pulp produced;

(4) An emission equal to or greater than forty (40) percent opacity.

Section 4. Standard for Total Reduced Sulfur (TRS).

(1) No person shall cause, suffer, allow or permit total reduced sulfur emissions from the recovery furnace of any kraft (sulfate) pulp mill in excess of an exit stack gas concentration of fifteen (15) parts per million by volume expressed as an arithmetic average over any consecutive twenty-four (24) hour period.

(2) No person shall cause, allow or permit total reduced sulfur emissions from the recovery furnace of any kraft pulp mill in excess of an exit stack gas concentration of forty (40) parts per million by volume for more than sixty (60) total minutes in any twenty-four (24) hour period.

(3) No person shall cause, suffer, allow or permit the emissions of various noncondensable gas streams from digester relief, blow tank relief, evaporator hot wells, or multiple effect evaporators containing total reduced sulfur in a kraft pulp mill unless treated by thermal oxidation or an equivalent method with ninety-eight (98) percent efficiency.

(4) Control of other points of emission of total reduced sulfur, shall be considered on an individual basis as determined by the Department.

Section 5. Test Methods and Procedures. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Sections 3 and 4 shall be conducted according to the following methods (filed by reference in 401 KAR 50:015):

(1) Reference Method 5 for the emission rates of particulate matter and the associated moisture content.

(2) Reference Method 1 for sample and velocity traverses.

(3) Reference Method 2 for velocity and volumetric flow rate.

(4) Reference Method 3 for gas analysis.

(5) Reference Method 9 for visible emissions.

(6) Reference Method 16 for the concentration of TRS. All concentrations of TRS from the lime kiln and recovery furnace that are measured as required by this subsection shall be corrected to ten (10) percent by volume oxygen and eight (8) percent by volume oxygen, respectively, when the oxygen concentrations exceed these values.

(7) Reference Method 17 (in-stack filtration) may be used as an alternative method for Reference Method 5 provided that a constant value of 0.009 g/dscm (0.004 gr/dscf) is added to the results of Reference Method 1 and the stack temperature is no greater than 205°C. (400°F).

(8) For particulate tests, the sampling time for each run shall be at least sixty (60) minutes and the sampling rate shall be at least 0.85 dscm/hr (0.53 dscf/hr) except that shorter sampling times, when necessitated by process variable or other factors, may be approved by the Department. Water shall be used as the clean up solvent instead of acetone in the sample recovery procedure outlined in Reference Method 5 or 17.

401 KAR 61:030. Existing sulfuric acid plants.

Section 1. Applicability. The provisions of this regulation shall apply to affected facilities associated with sulfuric acid plants commenced before the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010. "Classification date" means August 17, 1971.

Section 3. Standard for Sulfuric Acid Mist. No person shall cause, suffer, allow, or permit the following emissions into the open air:

(1) Sulfuric acid mist in the effluent in excess of 0.50 pounds per ton of acid produced, the production being expressed as 100% sulfuric acid.

(2) A visible emission which is greater than twenty (20) percent opacity.

Section 4. Standard for Sulfur Dioxide. No person shall cause, suffer, allow, or permit the following emission into the open air: Sulfur dioxide in the effluent in excess of 27.6 pounds per ton of acid produced, the production being expressed as 100% sulfuric acid.

Section 5. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Sections 3 and 4:

(a) Reference Method 8 for the concentrations of sulfur dioxide and acid mist;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) The moisture content can be considered to be zero. For Reference Method 8 the sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 1.15 dscm (40.6 dscf) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the Department.

(3) Acid production rate, expressed in metric tons per hour of 100 percent sulfuric acid shall be determined during each testing period by suitable methods and shall be confirmed by a material balance over the production system.

(4) Acid mist and sulfur dioxide emissions, expressed in g/metric ton of 100 percent sulfuric acid shall be determined by dividing the emission rate in g/hr by the acid production rate. The emission rate shall be determined by the equation g/hr = (QS)(c), where QS = volumetric flow rate of the effluent in dscm/hr as determined in accordance with Section 5(1)(c) of this regulation, and c = acid mist and sulfur dioxide concentrations in g/dscm as determined in accordance with subsection (1)(a) of this section.

401 KAR 61:035. Existing process gas streams.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which means any process gas stream which:

(1) Is not elsewhere subject to a standard of performance within this chapter with respect to hydrogen sulfide, sulfur dioxide, or carbon monoxide;

(2) Commenced before the classification date defined below;

(3) Emits hydrogen sulfide or sulfur dioxide and is located in a county classified as Class I or VA with respect to sulfur dioxide;

(4) Emits carbon monoxide generated during the operation of any grey iron cupola, blast furnace, basic oxygen steel furnace, coal conversion plants, catalyst regeneration of a petroleum cracking system, or other petroleum process and is located in an area classified non-attainment with respect to carbon monoxide in 401 KAR 51:010.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010 or 401 KAR 50:025.

(1) "Classification date" means the effective date of this regulation.

(2) "Process gas stream" means any gas stream emitted from any process, including, but not limited to, petroleum refineries, by-product coke plants, grey iron cupolas, blast furnaces, coal conversion plants and basic oxygen steel furnaces, except process upset gas as defined in this section and the combustion products of purchased coke oven gas.

(3) "Process upset gas" means any gas generated by a process unit as a result of startup, shutdown, upset, or malfunction.

(4) "Process unit" means any segment of the plant in which a specific processing operation is conducted.

Section 3. Standard for Hydrogen Sulfide. No person shall cause, suffer, allow or permit the emission or combustion of hydrogen sulfide in a process gas stream to exceed ten (10) grains per 100 dscf (165 ppm by volume) at zero percent oxygen.

Section 4. Standard for Sulfur Dioxide. No person shall cause, suffer, allow or permit the emission of sulfur dioxide in a process gas stream to exceed 239 grains per 100 dscf (2,000 ppm by volume) at zero percent oxygen.

Section 5. Standard for Carbon Monoxide.

No person shall cause, suffer, allow, or permit the emission of carbon monoxide in a process gas stream or a waste gas stream,

unless the gases are burned at 1,300°F for 0.5 seconds or greater in a direct flame afterburner or equivalent device equipped with an indicating pyrometer which is positioned in the working area at the operator's eye level.

Section 6. Test Methods and Procedures. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Sections 3 and 4 shall be conducted according to the following methods (filed by reference in 401 KAR 50:015):

(1) Reference Method 11 for hydrogen sulfide. The sample shall be drawn from a point near the centroid of the gas line. The minimum sampling time shall be ten (10) minutes and the minimum sample volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples shall constitute one run. Samples shall be taken at approximately one hour intervals.

(2) Reference Method 6 for sulfur dioxide. Reference Method 1 shall be used for velocity traverses and Reference Method 2 for determining velocity and volumetric flow rate. The sampling site for determining SO2 concentration by Reference Method 6 shall be the same as for determining the volumetric flow rate by Reference Method 2. The sampling point in the duct for determining SO2 concentration by Reference Method 6 shall be at the centroid of the cross section or at a point no closer to the walls than one (1) m (thirty-nine (39) inches) if the cross sectional

area is five (5) square meters or more and the centroid is more than one meter from the wall. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. The minimum sampling time shall be ten (10) minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples shall constitute one run. Three runs will constitute compliance test. Samples shall be taken at approximately one (1) hour intervals.

Section 7. Compliance Timetable. Those affected facilites subject to the standards in this regulation shall achieve compliance with those standards within eighteen (18) months of the effective date of this regulation.

(1) Hydrogen sulfide and sulfur dioxide. The provisions of Sections 3 and 4 are applicable upon the effective date of this regulation with respect to affected facilities located in counties classified as Class I with repect to sulfur dioxide. The owner or operator of an affected facility located in a Class VA county with respect to sulfur dioxide shall be required to complete the following.

(a) Submit a final control plan for achieving compliance with Sections 3 and 4 no later than September 1, 1979.

(b) Award the control system contract no later than October 1, 1979.

(c) Initiate on-site construction or installation of emission control equipment no later than September 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than December 1, 1980.

(e) Final compliance shall be achieved no later than February 1, 1981 .

(2) Carbon monoxide. The owner or operator of an affected facility shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with Section 5 no later than September 1, 1979.

(b) Award the control system contract no later than October 1, 1979.

(c) Initiate on-site construction or installation of emission control equipment no later than July 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than October 1, 1980.

(e) Final compliance shall be achieved no later than December 1, 1980.

401 KAR 61:040. Existing ethylene producing plants.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which means each waste gas stream of ethylene producing plants commenced before the classification date defined below, and which are located in a region classified as Priority I with respect to photochemical oxidants (and hydrocarbons).

Section 2. Definitions. As used in this section, all terms not defined herein shall have the meaning given them in 401 KAR 50:010 "Classification date" means April 9, 1972.

Section 3. Standard for Hydrocarbons. No person shall emit into the atmosphere a waste gas stream from any ethylene producing plant unless the waste gas stream is subjected to temperatures of 1,300°F for 0.3 [0.5] seconds or greater in a direct-flame afterburner or equally effective catalytic vapor incinerator. Either device must be equipped with an indicating pyrometer which is positioned in the working area at the operator's eye level.

401 KAR 61:045. Existing oil-effluent water separators.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

(3) Oil-effluent water separators used exclusively in conjunction with the production of crude oil shall be exempted from this regulation.

Section 2. Definitions. As used in this regulation all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Affected facility" means any oil-effluent water separator which recovers 200 gallons a day or more of any petroleum products from any equipment which processes, refines, stores, or handles hydrocarbons with a Reid vapor pressure of 0.5 psia or greater.

(2) "Oil-effluent water separator" means any tank, box, sump, or other container in which any petroleum or product thereof, floating on or entrained or contained in water entering such tank, box, sump, or other container, is physically separated and removed from such water prior to outfall, drainage, or recovery of such water.

(3) "Floating roof" means a vessel cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and vessel wall.

(4) "Classification date" means the effective date of this regulation.

(5) "Vapor recovery system" means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from a vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

Section 3. Standard for Hydrocarbons.

Any oil-effluent water separator shall be a vessel equipped with a floating roof, or a vessel equipped with a vapor recovery system, or their equivalent. All gauging and sampling devices shall be gas tight except when gauging and sampling is taking place.

Section 4. Compliance Timetable.

(1) An affected facility located in a Priority I Region for hydrocarbons shall be in compliance on or before the effective date of this regulation.

(2) The owner or operator of an affected facility located in a Priority III Region for hydrocarbons shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(b) Award the control device contract no later than December 1, 1979.

(c) Initiate on-site construction or installation of emissions control equipment no later than March 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than October 1, 1980.

(e) Final compliance shall be achieved no later than January 1, 1981.

401 KAR 61:050. Existing storage vessels for petroleum liquids.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the applicable classification date defined below, which is located:

(1) in an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) in any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

(3) This regulation shall not apply to storage vessels located on a farm and used exclusively for storing petroleum liquids used by the farm.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Affected facility" means a storage vessel for petroleum liquids which has a storage capacity of greater than 580 gallons.

(2) "Storage vessel" means any tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

(a) Pressure vessels which are designed to operate in excess of fifteen (15) pounds per square inch gauge without emissions to the atmosphere except under emergency conditions,

(b) Subsurface caverns or porous rock reservoirs, or

(c) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(3) "Petroleum liquids" means crude petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Number 2 through Number 6 fuel oils, gas turbine fuel oil Number 2-GT through 4-GT, or diesel fuel oils Number 2-D and 4-D as specified by the Department.

(4) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, or reforming of unfinished petroleum derivatives.

(5) "Crude petroleum" means a naturally occurring mixture which consists of hydrocarbons and/or sulfur, nitrogen and/or oxygen derivatives of hydrocarbons and which is a liquid at standard conditions.

(6) "Hydrocarbon" means any organic compound consisting predominantly of carbon and hydrogen.

(7) "Condensate" means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

(8) "True vapor pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods specified by the Department.

(9) "Floating roof" means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

(10) "Vapor recovery system" means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from the storage vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

(11) "Reid vapor pressure" is the absolute vapor pressure of volatile crude oil and volatile [non-viscous] petroleum liquids, except liquified petroleum gases, as determined by methods specified by the Department.

(12) "Submerged fill pipe" means any fill pipe the discharge of which is entirely submerged when the liquid level is six (6) inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean every fill pipe the discharge opening of which is entirely submerged when the liquid level is two (2) times the fill pipe diameter above the bottom of the tank.

(13) "Classification date" means April 9, 1972.

Section 3. Standard for Hydrocarbons. The owner or operator of any storage vessel to which this regulation applies shall store petroleum liquids as follows:

(1) If the storage vessel has a storage capacity greater than 40,000 gallons and if the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than seventy-eight (78) mm Hg (1 [illegible] psia) but not greater than 570 mm Hg (11.1 psia) the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.

(2) If the storage vessel has a storage capacity greater than 40,000 gallons and if the true vapor pressure of the petroleum liquid as stored is greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

(3) If the storage vessel has a storage capacity greater than 580 gallons, and if the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 1.5 psia, as a minimum it shall be equipped with a permanent submerged fill pipe.

Section 4. Operating Requirements.

(1) There shall be no visibile holes, tears, or other openings in the seal or any seal fabric; and

(2) All openings, except stub drains, shall be equipped with covers, lids, or seals such that:

(a) The cover, lid, or seal is in the closed position at all times except when in actual use;

(b) automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports; and

(c) rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

Section 5. Compliance Timetable.

(1) An affected facility located in a Priority I Region for hydrocarbons shall be in compliance on or before the effective date of this regulation.

(2) Except as provided in subsection (3) of this section, the owner or operator of an affected facility located in a Priority III region for hydrocarbons shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(b) Award the control device contract no later than January 1, 1980

(c) Initiate on-site construction or installation of emissions control equipment no later than July 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than February 1, 1981

(e) Final compliance shall be achieved no later than May 1, 1981.

(3) An owner or operator of a storage vessel with a storage capacity of greater than 580 gallons but less than or equal to 40,000 gallons which is associated with a bulk gasoline plant regulated by 401 KAR 61:056 shall adhere to the compliance schedule provided therein.

401 KAR 61:055. Existing loading facilities at bulk gasoline terminals.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010 or

(2) In any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Affected facility" means the facilities at a bulk gasoline terminal for loading gasoline into tank trucks, trailers, railroad cars, or other non-marine mobile vessels.

(2) "Bulk gasoline terminal" means a facility for the storage and dispensing of gasoline where incoming gasoline loads are received by pipeline, marine tanks or barge, and where outgoing gasoline loads are transferred by tank trucks, trailers, railroad cars or other non-marine mobile vessels.

(3) "Gasoline" means any petroleum distillate used as a fuel for internal combustion engines and having a Reid vapor pressure of 4.0 pounds per square inch or greater.

(4) "Classification date" means the effective date of this regulation.

Section 3. Standard for Hydrocarbons.

(1) No owner or operator of any loading facility shall load gasoline unless such facility is equipped with a vapor control system which is in good working order and in operation.

(2) Loading shall be accomplished in such a manner that all displaced vapor and air will be vented only to the vapor collection system. Measures shall be taken to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected.

(3) No owner or operator shall permit the hydrocarbon emissions from the vapor control device to exceed eighty (80) milligrams per liter of gasoline loaded.

(4) No owner or operator shall open tank hatches or allow hatches to be opened at any time during loading operations if bottom-fill is practiced. If top-submerged fill is practiced, the hatch is to be opened the minimum time necessary to install and remove the submerged fill pipe and associated vapor collection equipment.

(5) No owner or operator shall permit there to be any leak in the railroad cars, trailers, tank trucks, pressure relief valves, or associated vapor collection. A leak is defined as a reading of ten (10) percent of the lower explosive limit as propane on the portable hydrocarbon detector (explosimeter) with the probe one (1) centimeter from the source.

(6) No owner or operator shall permit gasoline to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.

Section 4. Monitoring and Reporting Requirements. The owner or operator shall conduct such monitoring of operations and submit records as specified by the Department.

Section 5. Compliance.

(1) The design of the vapor control system is subject to the approval of the Department.

(2) Kentucky Method 95, filed by reference in 401 KAR 50:015, shall be used to determine compliance with the standard in Section 3.

Section 6. Compliance Timetable. The owner or operator of an affected facility shall be required to complete the following:

(1) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(2) Award the control system contract no later than January 1, 1980.

(3) Initiate on-site construction or installation of emission control equipment no later than July 1, 1980.

(4) On-site construction or installation of emission control equipment shall be completed no later than March 1, 1980.

(5) Final compliance shall be achieved no later than May 1, 1981.

401 KAR 61:056. Existing bulk gasoline plants.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which commenced before the classification date defined below , which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a bulk plant.

(2) "Bulk gasoline plant" means a facility for the storage and dispensing of gasoline that employs tank trucks, trailers, or other mobile non-marine vessels for both incoming and outgoing gasoline transfer operations

(3) "Gasoline" means any petroleum distillate having a Reid vapor pressure of 4.0 pounds per square inch or greater used as a fuel for internal combustion engines

(4) "Bottom fill system" means a system of filling transport vehicle tanks through an opening that is flush with the bottom of the transport vehicle tank.

(5) "Vapor balance system" means a combination of pipes or hoses which create a closed system between the vapor spaces of an unloading tank and a receiving tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded.

(6) "Submerged fill tube system" means a fill tube the discharge of which is entirely submerged when the liquid level is six (6) inches above the bottom of the transport vehicle tank.

(7) "Classification date" means the effective date of this regulation.

(8) "Transport vehicle" means tank trucks, trailers, railroad or tank cars .

Section 3. Standard for Hydrocarbons.

(1) The owner or operator of an affected facility shall install, maintain, and operate:

(a) Stationary storage tank control devices according to the provisions of 401 KAR 59:050 and/or 401 KAR 61:050.

(b) A vapor balance system for:

1. filling of stationary storage tanks from transport vehicle tanks; and

2. filling of transport vehicle tanks from stationary storage tanks.

(c) For loading into transport vehicle tanks either:

1. A submerged fill tube system; or

2. A bottom fill system.

(2) The vapor balance system shall be equipped with fittings which are vapor tight and will automatically close upon disconnection so as to prevent the release of organic material.

(3) The cross-sectional area of the vapor return hose must be at least fifty (50) percent of the cross-sectional area of the liquid fill line and free of flow restrictions.

(4) The vapor balance system must be equipped with interlocking devices which prevent transfer of gasoline until the vapor return hose is connected.

(5) Transport vehicle tank hatches shall be closed at all times during loading operations.

(6) There shall be no leaks from the pressure/vacuum relief valves and hatch covers of the stationary storage tanks or transport vehicle tanks during loading.

(7) The pressure relief valves on storage vessels and tank trucks or trailers shall be set to release at no less than 0.7 psig unless a lower setting is required by applicable fire codes.

(8) The owner or operator shall not load gasoline into any transport vehicle or receive gasoline from any transport vehicle which does not have proper fittings for connection of the vapor balance system, nor shall the owner or operator load or receive gasoline unless the vapor balance system is properly connected and in good working order. Except

as provided in subsection (9) of this section the fittings on the transport vehicle tanks must be vapor tight and automatically close upon disconnection so as to prevent the release of organic material.

(9) The following shall apply to the loading of a transport vehicle tank by means of a submerged fill tube system:

(a) When inserted into the tank, the submerged fill tube system must form a vapor tight seal with the tank.

(b) Tank hatches are to be opened only for the minimum time necessary to insert or remove the submerged fill tube system.

(10) No owner or operator shall permit gasoline to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.

Section 4. The owner or operator may elect to use an alternate control system if it can be demonstrated to the Department's satisfaction that the alternate system will achieve equivalent control efficiency.

Section 5. Compliance Timetable.

(1) The owner or operator of an affected facility located in any county designated non-attainment for ozone under 401 KAR 51:010 shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(b) Award the control system contract no later than January 1, 1980.

(c) Initiate on-site construction or installation of emission control equipment no later than July 1, 1980.

(d) On site construction or installation of emission control equipment shall be completed no later than March 1, 1981.

(e) Final compliance shall be achieved no later than May 1, 1981.

(2) The owner or operator of an affected facility located in a county not specified under subsection (1) of this section shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1981.

(b) Award the control system contract no later than January 1, 1982.

(c) Initiate on-site construction or installation of emission control equipment no later than July 1, 1982.

(d) On site construction or installation of emission control equipment shall be completed no later than March 1, 1983

(e) Final compliance shall be achieved no later than May 1, 1983.

401 KAR 61:060. Existing sources using organic solvents.

Section 1. Applicability.

(1) The provisions of this regulation shall apply to any affected facility:

(a) Located in a Priority I Region for photochemical oxidants which commenced before the classification date defined below;

(b) Located in a Priority III Region for photochemical oxidants which commenced before the classification date defined below but on or after April 9, 1972.

(2) The provisions of this regulation shall not apply to:

(a) The manufacture of organic solvents or the transport, loading, or storage of organic solvents or materials containing organic solvents;

(b) The spraying or other employment of insecticides, pesticides, or herbicides;

(c) The employment, application, evaporation or drying of saturated halogenated hydrocarbons or perchlorethylene;

(d) The use of any material in any affected facility described in subsection (1) of this section if the volatile content consists of non-photochemically reactive solvent comprising not more than thirty (30) percent by volume of the material as applied;

(e) The use of any material in any affected facility described in subsection (1) of this section if the volatile content consists only of water and non-photochemically reactive solvent and the solvent comprises not more than twenty (20) percent of said volatile content by volume as applied;

(f) The use of equipment for which other requirements are specified by regulations of the Division of Air Pollution or which are exempt from air pollution control requirements.

(g) The emergency release of organic material due to overpressurization provided that the vents are equipped with self-closing pressure relief valves or equivalent devices. Rupture discs are not acceptable as pressure relief valves.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Affected facility" means any article, machine, equipment, or other contrivance used for employing or applying:

(a) Any organic solvent which is photochemically reactive or material containing such photochemically reactive solvent, or;

(b) Any organic solvent, regardless of photochemical reactivity, which is baked, heat-cured, or heat polymerized in the presence of oxygen;

(2) "Organic materials" means chemical compounds of carbon excluding, methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate;

(3) "Organic solvents" means organic materials which are liquids at standard conditions and which are used as dissolvers, viscosity reducers, cleaning agents, diluents, or thinners, except that such materials which exhibit a boiling point higher than 220 degrees Fahrenheit at 0.5 millimeters mercury absolute pressure or having an equivalent vapor pressure shall not be considered to be solvents unless exposed to temperatures exceeding 220 degrees Fahrenheit;

(4) "Photochemically reactive solvent" means any solvent with an aggregate of more than twenty (20) percent of its total volume composed of the chemical compounds classified below or which exceeds any of the following individual percentage composition limitations, referred to the total volume of solvent;

(a) A combination of hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones having an olefinic or cyclo-olefinic type of unsaturation; five (5) percent;

(b) A combination of aromatic compounds with eight (8) or more carbon atoms to the molecule except ethylbenzene, eight (8) percent;

(c) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene; twenty (20) percent;

(d) When any organic solvent or any constituent of an organic solvent may be classified by its chemical structure into more than one of the above groupds of organic compounds it shall be considered as a member of the most reactive chemical group, that is, that group having the least allowable percent of the total volume of solvents.

(5) "Classification date" means the effective date of this regulation.

Section 3. Standard for Organic Material.

(1) No person shall discharge into the open air, from any affected facility using organic solvents more than forty (40) pounds of organic material in any one (1) day, nor eight (8) pounds in any one (1) hour unless said emissions have been reduced by at least eighty-five (85) percent by weight.

(2) Those portions of any series of affected facilities designed for processing a continuous web, strip or wire which emit organic materials shall be taken collectively to determine compliance with this section. Emissions of organic materials resulting from air or heated drying of products for the first twelve (12) hours after their removal from an affected facility shall be included in determining compliance with this section. Further, emissions of organic material to the atmosphere from the clean-up with a organic solvent of any affected facility shall be included with other emissions of organic materials from that affected facility for determining compliance with this regulation.

(3) Emissions of organic materials into the atmosphere required to be controlled by subsections (1) and (2) of this section shall be reduced by:

(a) Incineration, provided that ninety (90) percent or more of the carbon in the organic material discharged from an affected facility is oxidized to carbon dioxide; or

(b) Adsorption; or

(c) Modifying processing procedures, equipment and/or materials in such a manner so as to achieve no less than the degree of control of organic solvents required. The implementation of such modifications in lieu of compliance with subsections (1) and (2) of this section shall require the express prior approval of the Department.

(4) A person incinerating, adsorbing, or otherwise processing organic materials pursuant to this section shall provide, properly install and maintain in calibration, in good working order and in operation, devices as specified in the permit to construct or the permit to operate, or as specified by the Department, for indicating temperatures, pressures, rates of flow or other operating conditions necessary to determine the degree and effectiveness of air pollution control.

(5) Any person using organic solvents or any material containing organic solvents shall supply the Department, upon request and in the manner and form prescribed, written evidence of the chemical composition, physical properties and amount consumed for each organic solvent used.

(6) The owner or operator of an affected facility may apply to the Department for approval of an emissions reduction plan as an alternative to the standards set forth in Section 3(1). The Department may approve the application if the owner or operator demonstrates:

(a) That compliance with the standards contained in Section 3(1) is technically or economically infeasible; and

(b) That any emissions in excess of those allowed for the affected facility will be compensated by reducing emissions from other facilities at the source below the allowable organic material emission rates or by reducing emissions of organic material from non-regulated facilities within the source.

(7) The plan of emissions reduction approved pursuant to Section 3(6) shall be included as a condition to permit to operate the source and shall be approved by the U.S. Environmental Protection Agency.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

401 KAR 61:065. Existing nitric acid plants.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility which means each nitric acid production unit commenced before the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Nitric acid production unit" means any facility producing weak nitric acid by either the pressure or atmospheric pressure process.

(2) "Weak acid production unit" means acid which is thirty (30) to seventy (70) percent by weight in strength.

(3) "Classification date" means August 17, 1971.

Section 3. Standard for Nitrogen Oxides. On and after the date on which the performance test required to be conducted by 401 KAR 61:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which:

(1) Contain nitrogen oxides, expressed as nitrogen dioxide, in excess of 2.9 kg per metric ton of acid produced (5.8 lb. per ton), the production being expressed as 100 percent nitric acid.

(2) Exhibit ten (10) percent opacity, or greater.

Section 4. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standard prescribed in Section 3 as follows:

(a) Reference Method 7 for the concentration of nitrogen oxides;
(b) Reference Method 1 for sample and velocity traverse;
(c) Reference Method 2 for velocity and volumetric flow rate; and
(d) Reference Method 3 for gas analysis.

(2) The sampling point shall be the center of the stack or duct at a point no closer to the walls than one (1) meter (3.28 feet). Each run shall consist of at least four (4) grab samples taken at approximately fifteen (15) minute intervals. The arithmetic mean of the samples shall constitute the run value. A velocity traverse shall be performed once per run.

(3) Acid production rate, expressed in metric tons per hour of 100 percent nitric acid, shall be determined during each testing period by suitable methods and shall be confirmed by a material balance over the production system.

(4) For each run, nitrogen oxides, expressed in g/metric ton of 100 percent nitric acid, shall be determined by dividing the emission rate in g/hour by the acid production rate. The emission rate shall be determined by the equation:

$$g/hr = (Qx)\ (c)$$

where:

Qx = volumetric flow rate of the effluent in dscm/hr, and
c = nitrogen oxides concentration in g/dscm.

401 KAR 61:070. Existing ferroalloy production facilities.

Section 1. Applicability. The provisions of this regulation are applicable to the following affected facilities commenced before the classification date defined below: electric submerged arc furnaces which produce silicon metal, ferrosilicon, calcium silicon, silicomanganese zirconium, ferrochrome silicon, silvery iron, high-carbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, ferromanganese silicon, or calcium carbide; and dust-handling equipment.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Electric submerged arc furnace" means any furnace wherein electrical energy is converted to heat energy by transmission of current between electrodes partially submerged in the furnace charge.

(2) "Furnace charge" means any material introduced into the electric submerged arc furnace and may consist of, but is not limited to ores, slag, carbonaceous material, and limestone.

(3) "Product change" means any change in the composition of the furnace charge that would cause the electric submerged arc furnace to become subject to a different mass standard applicable under Section 3.

(4) "Slag" means the more or less completely fused and vitrified matter separated during the reduction of metal from its ore.

(5) "Tapping" means the removal of slag or product from the electric submerged arc furnace under normal operating conditions such as removal of metal under normal pressure and movement by gravity down the spout into the ladle.

(6) "Tapping period" means the time duration from initiation of the process of opening the tap hole until plugging of the tap hole is complete.

(7) "Furnace cycle" means the time period from completion of a furnace product tap to the completion of the next consecutive product tap.

(8) "Tapping station" means that general area where molten product or slag is removed from the electric submerged arc furnace.

(9) "Blowing tap" means any tap in which an evolution of gas forces or projects jets of flame or metal sparks beyond the ladle, runner or collection hood.

(10) "Furnace power input" means the resistive electrical power consumption of an electric submerged arc furnace as measured in kilowatts.

(11) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the air pollution control device (and located at or near such device) serving any electric submerged arc furnace subject to this regulation.

(12) "Control device" means the air pollution control equipment used to remove particulate matter generated by an electric submerged arc furnace from an effluent gas stream.

(13) "Capture system" means the equipment (including hoods, ducts, fans, dampers, etc.) used to capture or transport particulate matter generated by an affected electric submerged arc furnace to the control device.

(14) "Standard ferromanganese" means that alloy as defined by A.S.T.M. designation A-99-66(71) (A.S.T.M. designations filed by reference in 401 KAR 50:015).

(15) "Siliccmanganese" means that alloy as defined by A.S.T.M. designation A-483-64(74).

(16) "Calcium carbide" means material containing seventy (70) to eighty-five (85) percent calcium carbide by weight.

(17) "High-carbon ferrochrome" means that alloy as defined by A.S.T.M. designation A-101-73 grade HC1 through HC6.

(18) "Charge chrome" means that alloy containing fifty-two (52) to seventy (70) percent by weight chromium, five (5) to eight (8) percent by weight carbon, and three (3) to six (6) percent by weight silicon.

(19) "Silvery iron" means any ferrosilicon, as defined by A.S.T.M. designation A-100-69(74), which contains less than thirty (30) percent silicon.

(20) "Ferrochrome silicon" means that alloy as defined by A.S.T.M. designation A-482-66(71).

(21) "Silicomanganese zirconium" means that alloy containing sixty (60) to sixty-five (65) percent by weight silicon, 1.5 to 2.5 percent by weight calcium, five (5) to seven (7) percent by weight zirconium, 0.75 to 1.25 percent by weight aluminum, five (5) to seven (7) percent by weight manganese, and two (2) to three (3) percent by weight barium.

(22) "Calcium silicon" means that alloy as defined by A.S.T.M. designation A-495-64(70).

(23) "Ferrosilicon" means that alloy as defined by A.S.T.M. designation A-100-69(74) grades A,B,C,D, and E which contains fifty (50) or more percent by weight silicon.

(24) "Silicon metal" means any silicon alloy containing more than ninety-six (96) percent silicon by weight.

(25) "Ferromanganese silicon" means that alloy containing sixty-three (63) to sixty-six (66) percent by weight manganese, twenty-eight (28) to thirty-two (32) percent by weight silicon, and a maximum of 0.08 percent by weight carbon.

(26) "Classification date" means October 21, 1974.

(27) "Concentrated discharge" means that the outlet from a control device consists of either stacks (one or more) or openings on the device's top or side which has (have) a total area less than five (5) percent of the corresponding top or side and which has (have) a length of not more than twice the width.

(28) "Dispersed discharge" means that the outlet from a control device consists of opening(s) on the device's top or side which has (have) a total area exceeding five (5) percent of the corresponding top or side or which has (have) a length more than twice the width. A control device may have both dispersed and concentrated discharges.

Section 3. Standard for Particulate Matter.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any electric submerged arc furnace any gases which:

(a) Exit from a control device and exhibit an opacity equal to or greater than

Three (3) percent, where control device has dispersed discharge.

(b) Exit from any building opening and exhibit an opacity equal to or greater than:

1. Fifteen (15) percent for these gases which are the result of routine smelting/melting operations where no auxiliary operations will occur;

2. Twenty (20) percent for those gases which are from a furnace associated with metallurgical treatment while no auxiliary operations are occurring;

3. Twenty-five (25) percent for those gases which are the result of tapping operations;

4. Forty (40) percent for those gases which occur only during a metallurgical treatment, or

5. Forty (40) percent for those gases which occur during the pouring of metal from slag ladles into castbeds or molds.

(2) On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any dust-handling equipment any gases which exhibit fifteen (15) percent opacity or greater.

Section 4. Test Methods and Procedures

(1) Reference Method 9 in Appendix A of 40 CFR 60, except as provided in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Section 3.

401 KAR 61:075. Steel plants and foundries using existing electric arc furnaces.

Section 1. Applicability. The provisions of this regulation apply to the following affected facilities in steel plants and foundries commenced before the classification date defined below: electric arc furnaces and/or associated metallurgical equipment located in the same shop as well as associated dust-handling equipment.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Electric arc furnace (EAF)" means any furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. Furnaces from which the molten steel is cast into the shape of finished products, such as in a foundry, are affected facilities included within the scope of this definition. Furnaces which, as the primary source of iron, continuously feed pre-reduced ore pellets are not affected facilities within the scope of this definition.

(2) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the control device and located at or near the control device for an EAF subject to this regulation.

(3) "Control device" means the air pollution control equipment used to remove particulate matter generated by an EAF(s) from the effluent gas stream.

(4) "Capture system" means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by an EAF and associated metallurgical equipment to the air pollution control device.

(5) "Associated metallurgical equipment" in the shop includes but is not limited to scrap pre-heaters and degreasers, and equipment for hot metal transfer, charging, lancing, boiling, slagging, and de-slagging, tapping, innoculating, teeming, hot-topping, vacuum de-gassing, continuous casting, etc.

(6) "Charge" means the addition of iron and steel scrap or other materials into the top of an electric arc furnace.

(7) "Charging period" means the time period commencing at the moment an EAF starts to open and ending either three (3) minutes after the EAF roof is returned to its closed position or six (6) minutes after commencement of opening of the roof, whichever is longer.

(8) "Tap" means the pouring of molten steel from an EAF.

(9) "Tapping period" means the time period commencing at the moment an EAF begins to tilt to pour and ending either three (3) minutes after an EAF returns to an upright position or six (6) minutes after commencing to tilt, whichever is longer.

(10) "Meltdown and refining" means that phase of the steel production cycle when charge material is melted and undesirable elements are removed from the metal.

(11) "Meltdown and refining period" means the time period commencing at the termination of the initial charging period and ending at the initiation of the tapping period, excluding any intermediate charging periods.

(12) "Shop opacity" means the arithmetic average of twenty-four (24) or more opacity observations of emissions from the shop taken in accordance with Reference Method 9 of Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, for the applicable time periods.

(13) "Heat time" means the period commencing when scrap is charged to an empty EAF and terminating when the EAF tap is completed.

(14) "Shop" means the building which houses one or more EAF.

(15) "Direct shell evacuation system" means any system that maintains a negative pressure within the EAF above the slag or metal and ducts the emissions to the control device.

(16) "Concentrated discharge" means that the outlet from a control device consists of either stacks (one or more) or openings on the device's top or side which has (have) a total area less than five (5) percent of the corresponding top or side and which has (have) a length of not more than twice the width.

(17) "Dispersed discharge" means that the outlet from a control device consists of opening(s) on the device's top or side which has (have) a total area exceeding five (5) percent of the corresponding top or side or which have a length more than twice the width.

(18) "Classification date" means October 21, 1974.

Section 3. Standard for Particulate Matter.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from an electric arc furnace and associated metallurgical equipment any gases which:

(a) Exit from a control device and contain particulate matter in excess of .010 grains/dscf (twenty-three (23) mg/dscm);

(b) Exit from a control device and exhibit opacity in excess of;

1. Ten (10) percent for a control device with a concentrated discharge;

2. Three (3) percent for a control device with a dispersed discharge;

(c) Exit directly from a shop and exhibit an opacity greater than ten (10) percent except:

1. Shop opacity less than thirty (30) percent may occur which is caused by an EAF during its charging period;

2. Shop opacity less than thirty (30) percent may occur which is produced by an EAF during its tapping period;

3. Where the capture system is operated such that the roof of the shop is closed during the charge and the tap, and emissions to the atmosphere are prevented until the roof is opened after completion of the charge or tap, the shop opacity standards under this paragraph shall apply when the roof is opened and shall continue to apply for the length of time defined by the charging and/or tapping periods.

(2) On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from dust-handling equipment any gases which exhibit ten (10) percent opacity or greater.

Section 4. Monitoring of Operations.

(1) The owner or operator subject to the provisions of this regulation shall maintain records daily of the following information:

(a) Time and duration of each charge;

(b) Time and duration of each tap;

(c) All flow rate data obtained under subsection (2) of this section, or equivalent obtained under subsection (4) of this section, and;

(d) All pressure data obtained under subsection (5) of this section.

(2) Except as provided under subsection (4) of this section, the owner or operator subject to the provisions of this regulation shall install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of ± ten (10) percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The Department may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of Appendix A of 40 CFR 60.

(3) When the owner or operator of an EAF is required to demonstrate compliance with the standard under Section 3(1)(c), and at any other time the Department may require, the volumetric flow rate through each separately ducted hood shall be determined during all periods in

which the hood is operated for the purpose of capturing emissions from the EAF using the monitoring device under subsection (2) of this section. The owner or operator may petition the Department for re-establishment of these flow rates whenever the owner or operator can demonstrate to the Department's satisfaction that the EAF operating conditions upon which the flow rates were previously established are no longer applicable. The flow rates determined during the most recent demonstration of compliance shall be maintained (or may be exceeded) at the appropriate level for each applicable period. Operation at lower flow rates may be considered by the Department to be unacceptable operation and maintenance of the affected facility.

(4) The owner or operator may petition the Department to approve any alternative method that will provide a continuous record of operation of each emission capture system.

(5) Where emissions during any phase of the heat time are controlled by use of a direct shell evacuation system, the owner or operator shall install, calibrate, and maintain a monitoring device that continuously records the pressure in the free space inside the EAF. The pressure shall be recorded as fifteen (15) minute integrated averages. The monitoring device may be installed in any appropriate location in the EAF such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ± five (5) mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

(6) When the owner or operator of an EAF is required to demonstrate compliance with the standard under Section 3(1)(c) and at any other time the Department may require, the pressure in the free space inside the furnace shall be determined during the meltdown and refining period(s) using the monitoring device under subsection (5) of this section. The owner or operator may petition the Department for re-establishment of the fifteen (15) minute integrated average pressure whenever the owner or operator can demonstrate to the Department's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times the EAF is operating in meltdown and refining periods. Operation at higher pressures may be considered by the Department to be unacceptable operation and maintenance of the affected facility.

(7) Where the capture system is designed and operated such that all emissions are captured and ducted to a control device, the owner or operator shall not be subject to the requirements of this section.

(8) Where each EAF in a shop has an actual tapping capacity of less than ten (10) tons, the owner or operator shall not be subject to the requirements of this section.

Section 5. Test Methods and Procedures.

(1) Reference methods in Appendix A of 40 CFR 60, except as provided under 401 KAR 50:045, shall be used to determine compliance with this regulation as follows:

(a) Reference Method 5 for concentration of particulate matter and associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate;

(d) Reference Method 3 for gas analysis; and

(e) Reference Method 9 for opacity determination.

(2) For Reference Method 5, the sampling time for each run shall be at least four (4) hours. When a single EAF is sampled, the sampling time for each run shall also include an integral number of heats. Shorter sampling times, when necessitated by process variables or other factors, may be approved by the Department. The minimum sample volume shall be 4.5 dscm (160 dscf).

(3) For the purpose of this section, the owner or operator shall conduct the demonstration of compliance with Section 3(1)(c) and furnish the Department a written report of the results of the test.

(4) During any performance test required under 401 KAR 61:005, no gaseous diluents may be added to the effluent gas stream after the fabric in any pressurized fabric filter collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(5) When more than one control device serves the EAF(s) being tested, the concentration of particulate matter shall be determined using the equation in Appendix A to this regulation.

(6) Any control device subject to the provisions of this regulation shall be designed and constructed to allow measurement of volumetric flow rate and emissions using applicable test methods and procedures.

(7) Where emissions from any EAF(s) are combined with emissions from other affected facilities in the same shop and controlled by a common capture system and control device, the owner or operator may use any of the following procedures during a performance test:

(a) Base compliance on control of the combined emissions;

(b) Utilize a method acceptable to the Department which compensates for the emissions from the other affected facilities;

(c) Any combination of the criteria of paragraphs (a) and (b) of this subsection.

APPENDIX A TO 401 KAR 61:075
EQUATION FOR CONCENTRATION OF PARTICULATE MATTER FOR MORE THAN ONE CONTROL DEVICE

$$C_s = \frac{\sum_{n=1}^{N} (C_s Q_s)_n}{\sum_{n=1}^{N} (Q_s)_n}$$

Where:

C_s = concentration of particulate matter in mg/dscm (gr/dscf) as determined by Reference Method 5.

N = total number of control devices tested.

Q_s = volumetric flow rate of the effluent gas stream in dscm/hr (dscf/hr) as determined by Reference Method 2.

$(C_s Q_s)_n$ or $(Q_s)_n$ = value of the applicable parameter for each control device tested.

401 KAR 61:080. Steel plants using existing basic cxygen process furnaces.

Section 1. Applicability. Provisions of this regulation are applicable to the following affected facilities commenced before the classification date defined below: basic oxygen process furnaces, associated metallurgical equipment, and dust-handling equipment.

Section 2. Definitions. As used in this regulation all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Basic oxygen process furnaces (BOPF)" means any furnace producing steel by charging scrap steel, hot metal, and flux materials into a vessel and introducing a high volume of an oxygen-rich gas.

(2) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the control device and located at or near the control device for a BOPF and/or associated equipment subject to this regulation.

(3) "Control device" means the air pollution control equipment used to remove from the effluent gas stream, particulate matter generated by BOPF and/or associated equipment.

(4) "Steel production cycle" means the operations required to produce each batch of steel and includes the following major functions: scrap preheating, scrap charging, hot metal charging, oxygen blowing and tapping.

(5) "Charge" means the addition of steel scrap or other materials into a BOPF followed by molten pig iron.

(6) "Tap" means the pouring of molten steel from a BOPF.

(7) "Shop" means the building or bay which houses one or more BOPF's and associated equipment.

(8) "Shop opacity" means the arithmetic average of twenty-four (24) or more opacity observations of emissions from the shop taken in accordance with Reference Method 9 of Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, for the applicable time periods.

(9) "Classification date" means June 11, 1973.

Section 3. Standard for Particulate Matter.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from a basic oxygen process furnace and/or associated metallurgical equipment located in the same shop any gases which:

(a) Exit from a control device and contain particulate matter in excess of .048 gr/dscf;

(b) Exit from a control device and exhibit opacity of forty (40) percent or more:

(c) Exit from a shop, due to operations of a BOPF and/or associated metallurgical equipment and exhibit opacity of fifteen (15) percent or more

(2) On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from dust-handling equipment any gases which exhibit ten (10) percent opacity or greater.

Section 4. Monitoring of Operations. The owner or operator of an affected facility shall maintain a single time-measuring instrument which shall be used in recording daily the time and duration of each steel production cycle, and the time and duration of any diversion of exhaust gases from the main stack servicing the BOPF.

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Section 5. Test Methods and Procedures.

(1) Reference methods in Appendix A of 40 CFR 60, except as provided under 401 KAR 50:045, shall be used to determine compliance with the standards prescribed under Section 3 as follows:

(a) Reference Method 5 for concentration of particulate matter and associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate;

(d) Reference Method 3 for gas analysis; and

(e) Reference Method 9 for opacity determination. For the purpose of this regulation, opacity observation taken at fifteen (15) second intervals immediately before and after a diversion of exhaust gases from the stack may be considered to be consecutive for the purpose of computing an average opacity for a six (6) minute period. Observations taken during a diversion shall not be used in determining compliance with the opacity standard.

(2) For Reference Method 5, the sampling for each run shall continue for an integral number of cycles with total duration of at least sixty (60) minutes. The sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times when necessitated by process variables or other factors may be approved by the Department. A cycle shall start at the beginning of either the scrap preheat or the oxygen blow and shall terminate immediately prior to tapping.

(3) Sampling of flue gases during each steel production cycle shall be discontinued whenever all flue gases are diverted from the stack and shall be resumed after each diversion period

Section 6. 401 KAR 3:060 is hereby repealed.

401 KAR 61:085. Existing service stations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility located in urban counties designated non-attainment for ozone according to 401 KAR 51:010 which commenced before the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means the gasoline storage tanks at a service station.

(2) "Classification date" means the effective date of this regulation.

(3) "Service station" means any public or private establishment except farms which dispenses gasoline into vehicle fuel tanks.

(4) "Submerged fill pipe" means any fill pipe the discharge of which is entirely submerged when the liquid level is six (6) inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean any fill pipe the discharge opening of which is entirely submerged when the liquid level is two (2) times the fill pipe diameter above the bottom of the tank.

(5) "Vapor balance system" means a system which conducts vapors displaced from storage tanks during filling operations to the storage compartment of the transport vehicle delivering the fuel.

(6) "Vent line restriction" means:

(a) an orifice of one-half to three-quarters inch inside diameter; or

(b) a pressure-vacuum relief valve set to open at eight (8) oz. per square inch pressure and four (4) oz. per square inch vacuum; or

(c) a vent shut-off valve which is activated by connection of the vapor return hose.

(7) "Interlocking system" means devices which keep the storage tank sealed unless the vapor hose is connected or which prevent delivery of fuel until the vapor hose is connected.

Section 3. Standard for Volatile Organic Compounds.

(1) The owner or operator of an affected facility shall install, maintain, and operate the following devices:

(a) Submerged fill pipe,

(b) Gauge well drop tube which extends to within six (6) inches of the bottom of the tank,

(c) Vent line restriction on the affected facility vent line, and

(d) Vapor balance system with an interlocking system and vapor tight connections on the liquid fill line and the vapor return line. The cross-sectional area of the vapor return hose must be at least fifty (50) percent of the liquid fill hose, and free of flow restrictions to achieve acceptable recovery. The size and design of the vapor return line and connections, including coaxial systems, are subject to the approval of the Department.

(2) The owner or operator may elect to use an alternate control system if that system can be demonstrated to the Department's satisfaction to achieve an equivalent control efficiency.

(3) The owner or operator shall not allow any transport vehicle to deliver fuel to an affected facility until the transport vehicle is properly connected to the vapor balance system or alternate control system.

Section 4. Compliance Timetable.

(1) The owner or operator of an affected facility with an annual throughput greater than or equal to 250,000 gal. shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(b) Award the control device contract no later than November 1, 1979.

(c) Initiate on-site construction or installation of emission control equipment no later than April 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than November 1, 1980.

(e) Final compliance shall be achieved no later than February 1, 1981.

(2) The owner or operator of an affected facility with an annual throughput of less than 250,000 gal. shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(b) Award the control device contract no later than November 1, 1980.

(c) Initiate on-site construction or installation of emission control equipment no later than April 1, 1981.

(d) On-site construction or installation of emission control equipment shall be completed no later than November 1, 1981.

(e) Final compliance shall be achieved no later than February 1, 1982.

401 KAR 61:090. Existing automobile and light duty truck surface coating operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for automobile and light-duty truck frames, small parts, wheels, and main body parts at an assembly plant but does not include the following:

(a) Underbottom - sound deadener coatings;

(b) Zinc rich anti-rust and weld line anti-rust prime coatings;

(c) Adhesive coatings or mastics;

(d) Flexible coatings;

(e) Plastic body fillers or caulks; or

(f) Interior coatings which are applied after upholstery and interior plastic parts are attached to the body.

(2) "Applicator" means the mechanism or device used to apply the coating, including, but not limited to dipping and spraying.

(3) "Automobile" means all passenger cars or passenger car derivatives capable of seating twelve (12) or fewer passengers.

(4) "Classification date" means the effective date of this regulation.

(5) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat or repair coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;

(b) process storage;

(c) applicators;

(d) drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) clean up operations;

(f) leaks, spills and disposal of volatile organic compounds;

(g) processing and handling of recovered volatile organic compounds;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;

(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 6, then that portion shall be considered to be a separate coating line.

(6) "Final repair coating line" means a coating line for the repainting of any coatings which are damaged during vehicle assembly.

(7) "Flashoff area" means the space between the application area and the oven.

(8) "Light-duty truck" means any motor vehicle rated at 3,864 kilograms (8,500 pounds) gross vehicle weight or less which are designed primarily for purposes of transportation of property or are derivatives of such vehicles. (Including but not limited to, pickups, vans, and window vans.)

(9) "Prime coat coating line" means a coating line for the first coating and surfacer which are responsible for protecting the surface from corrosion and providing for good adhesion of the topcoat.

(10) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(11) "Topcoat coating line" means a coating line for the coating of the surface to obtain desired aesthetic effects.

(12) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(13) "Surfacer" means the spray application of primer to touch-up areas on the surface not adequately covered during electrodeposition.

(14) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the

atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

(15) "Electrophoretic deposition" means a process of applying a coating by dipping the component in a coating bath with an electrical potential difference between the component and the bath.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under Section 6.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6. The following methods of analyses, filed by reference in 401 KAR 50:015, for coatings shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75 Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Compliance Timetable. The owner or operator of an affected facility shall be required to complete the following:

(1) Prime coatings systems and final repair coating systems except as provided for in subsection (3) of this section:

(a) Submit a final control plan for achieving compliance with this regulation no later than March 1, 1980.

(b) Award the control system contract and/or the exempt coatings contracts and purchase orders no later than March 1, 1981.

(c) Initiate on-site construction or installation of emission control equipment and/or process changes for exempt coatings no later than June 1, 1981.

(d) On-site construction or installation of emission control equipment and/or process changes for exempt coatings shall be completed no later than July 31, 1982.

(e) Final compliance shall be achieved no later than January 1, 1983.

(2) Topcoat systems:

(a) Submit a final control plan for achieving compliance with this regulation no later than July 1, 1980.

(b) Award the control system contract and/or the exempt coating contracts and purchase orders no later than March 1, 1983.

(c) Initiate on-site construction or installation of emission control equipment and/or process changes for exempt coatings no later than June 1, 1983.

(d) On-site construction or installation of emission control equipment and/or process changes for exempt coatings shall be completed no later than July 31, 1985.

(e) Final compliance shall be achieved no later than January 1, 1986.

(3) Prime coating lines which are using electrophoretic deposition on or before the effective date of this regulation shall be in compliance on the effective date of this regulation.

Section 6. Exemptions.

(1) Any affected facility shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is:

(a) Prime coating line: 0.14 kilograms per liter of coating (1.2 pounds per gallon), excluding water, which shall be applied by electrophoretic deposition and 0.34 kilograms per liter of coating

(2.8 pounds per gallon), excluding water, delivered to the applicators associated with the surfacer . An alternative for the surfacer is fifty-five (55) percent solids by volume organic-borne prime coat applied with a minimum of sixty-five (65) percent transfer efficiency . An alternative for the prime coating line is an organic borne prime coat consisting of a minimum of fifty-five (55) percent solids by volume which is applied with a minimum of fifty (50) percent transfer efficiency.

(b) Topcoat coating line: 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the applicator(s) associated with the topcoat coating line or, a fifty (50) percent solids by volume organic-borne topcoat applied with a minimum of sixty-five (65) percent transfer efficiency .

(c) Repair coating line: 0.58 kilograms per liter of coating (4.8 pounds per gallon), excluding water, as delivered to the applicator applied with a minimum of sixty-five (65) percent transfer efficiency.

(2) Any affected facility using this section of this regulation may elect to use an arithmetic average of the coatings used in the particular coating line involved. If such average meets the exemption then all the coatings will be considered to meet the exemption.

(3) The exemptions specified in this section may be achieved by:

(a) Use of low solvent coating, and/or

(b) Any other emission reduction process or equipment shown to be as effective.

Section 7. Variances. Variation with the standards and limitations contained in this regulation, when supported by adequate technical information will be considered by the department on a case-by-case basis to allow for technological or economic circumstances which are unique to a source.

401 KAR 61:095. Existing solvent metal cleaning equipment.

Section 1. Applicability. The provisions of the regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means cold cleaners, open top vapor degreasers, and conveyorized degreasers which utilize volatile organic compounds to remove soluable impurities from metal surfaces.

(2) "Volatile organic compounds" means chemical compounds of carbon excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate which have a vapor pressure greater than one tenth (0.1) mm of Hg at conditions of twenty (20) degress Celsius and 760 mm of Hg.

(3) "Classification date" means the effective date of this regulation.

(4) "Freeboard height" means, for a cold cleaner, the distance from the liquid solvent level in the degreaser tank to the lip of the tank. For a vapor degreaser it is the distance from the solvent vapor level in the tank to the lip of the tank.

(5) "Freeboard ratio" means the freeboard height divided by the width of the degreaser.

(6) "Refrigerated chiller" means a second set of freeboard condenser coils located slightly above the primary condenser coils which create a cold air blanket above the vapor zone.

(7) "Cold cleaner" means a batch-loaded degreaser whose solvent is kept below its boiling point.

(8) "Open top vapor degreaser" means a batch loaded degreaser whose solvent is heated to its boiling point creating a solvent vapor zone.

(9) "Conveyorized degreasers" means a degreaser which is continuously loaded by means of a conveyor system. Its solvent may be boiling or non-boiling.

(10) "Solvent" means, in this regulation, volatile organic compounds.

Section 3. Standard for Volatile Organic Compounds. The owner or operator of an affected facility to which this regulation applies shall install, maintain and operate the control equipment and observe at all times the operating requirements which apply to his type of degreaser as specified in Sections 4, 5, and 6.

Section 4. Cold Cleaners.

(1) Control equipment:

(a) The cleaner shall be equipped with a cover. If the solvent volatility is greater than fifteen (15) mm of Hg measured at 100°F or if the solvent is agitated or heated, then the cover shall be designed so that it can be easily operated with one hand.

(b) The cleaner shall be equipped with a drainage facility such that solvent that drains off parts removed from the cleaner will return to the cleaner. If the solvent volatility is greater than thirty-two (32) mm of Hg measured at 100°F then the drainage facility shall be internal so that parts are enclosed under the cover while draining. The drainage facility may be external if the Department determines that an internal type cannot fit into the cleaning system.

(c) A permanent, conspicuous label, summarizing the operating requirements specified in subsection (2) of this section shall be installed on or near the cleaner.

(d) If used, the solvent spray shall be a fluid stream (not a fine, atomized or shower type spray) and at a pressure which does not cause excessive splashing.

(e) If the solvent volatility is greater than thirty-two (32) mm of Hg measured at 100°F or if the solvent is heated above 120°F, then one of the following control devices shall be used:

1. Freeboard that gives a freeboard ratio greater than or equal to 0.7.

2. Water cover (solvent must be insoluable in and heavier than water).

3. Other systems of equivalent control, such as a refrigerated chiller or carbon adsorption.

(2) Operating requirements:

(a) Do not dispose of waste solvent or transfer it to another party, such that greater than twenty (20) percent by weight of the waste solvent can evaporate into the atmosphere. Store waste solvent only in covered containers.

(b) Close degreaser cover whenever not handling parts in the cleaner.

(c) Drain cleaned parts until dripping ceases (fifteen seconds is usually necessary).

Section 5. Open Top Vapor Degreasers.

(1) Control equipment.

(a) The degreaser shall be equipped with a cover that can be opened and closed easily without disturbing the vapor zone.

(b) The degreaser shall be equipped with the following safety switches:

1. Condenser flow switch and thermostat to shut off sump heat if condenser coolant either is not circulating or is too warm.

2. Spray safety switch to shut off spray pump if the vapor level drops more than four (4) inches below the bottom condenser coil in order to prevent spraying above the vapor level.

3. Vapor level control thermostat which shuts off sump heat if the vapor zone rises above the design level.

4. Equivalent safety systems as approved on a case-by-case basis by the Department.

(c) The degreaser shall be equipped with at least one of the following major control devices:

1. Freeboard ratio greater than or equal to 0.75, and if the degreaser opening is greater than ten (10) square feet, the cover shall be powered or mechanically assisted.

2. Refrigerated chiller.

3. Enclosed design such that the cover or door opens only when the dry part is actually entering or exiting the degreaser.

4. Carbon adsorption system, with ventilation greater than or equal to fifty (50) cfm/square foot of air/vapor interface area (when cover is open), and exhausting less than twenty-five (25) ppm by volume solvent averaged over one complete adsorption cycle.

5. Control system demonstrated to have control efficiency equivalent to or better than any of the above.

(d) A permanent, conspicuous label, summarizing the operating procedures specified in subsection (2) of this section shall be installed on or near the degreaser.

(2) Operating requirements:

(a) Keep the cover closed at all times except when processing work loads through the degreaser.

(b) Minimize solvent carry-out by the following measures:

1. Rack parts so that entrainment of solvent is avoided and full drainage is accomplished.

2. Move parts in and out of the degreaser at vertical speed less than eleven (11) ft./min.

3. Degrease the work load in the vapor zone until condensation ceases (thirty (30) seconds or more is usually necessary).

4. Tip out any pools of solvent on the cleaned parts before removal.

5. Allow parts to dry within the degreaser above the vapor zone until visually dry (fifteen (15) seconds is usually necessary).

(c) Do not degrease porous or absorbent materials such as cloth, leather, wood, or rope.

(d) Work loads should not occupy more than half of the degreaser's open top area.

(e) The vapor level should not drop more than four (4) inches when the work load enters or leaves the vapor zone.

(f) Never spray above the vapor level.

(g) Repair solvent leaks immediately or shut down the degreaser.

(h) Do not dispose of waste solvent or transfer it to another party such that greater than twenty (20) percent by weight of the waste solvent can evaporate into the atmosphere. Store waste solvent only in closed containers.

(i) Exhaust ventilation should not exceed sixty-five (65) cfm per square foot of degreaser area unless necessary to meet OSHA requirements or control device requirements. Ventilation fans should not be used near the degreaser opening.

(j) Water should not be visually detectable in the solvent exiting the water separator.

Section 6. Conveyorized Degreasers.

(1) Control equipment:

(a) A conveyorized degreaser shall be enclosed except for work load entrances and exits.

(b) The degreaser shall be equipped with a drying tunnel or another means such as rotating baskets sufficient to prevent cleaned parts from carrying out solvent liquid or vapor.

(c) Minimized openings: entrances and exits shall silhouette work loads so that the average clearance between the largest parts and the edge of the degreaser opening is either less than four (4) inches or less than ten (10) percent of the width of the opening.

(d) Down-time covers: The degreaser shall be equipped with covers for closing off the entrance and exit during shutdown hours.

(e) If the degreaser has an air/solvent interface area or an air/vapor interface area equal to or greater than twenty (20) square ft. it shall be equipped with at least one of the following major control devices:

1. Refrigerated chiller.

2. Carbon adsorption system with ventilation greater than or equal to fifty (50) cfm/square foot of air/vapor interface area (when down-time covers are open) and exhausting less then twenty five (25) ppm of solvent by volume averaged over a complete adsorption cycle.

3. A system demonstrated to have a control efficiency equivalent to or better than either of the above.

(f) If the degreaser is a vapor type, it shall be equipped with the following safety switches:

1. Condensor flow switch and thermostat which will shut off the sump heat if coolant is either not circulating or is too warm.

2. Spray safety switch which will shut off the spray pump or conveyor if the vapor level drops more than four (4) inches below the bottom condenser coil in order to prevent spraying above the vapor level.

3. Vapor level control thermostat which will shut off sump heat if the vapor level rises above the design level.

4. Equivalent safety systems as approved on a case-by-case basis by the Department.

(g) A permanent, conspicuous label, summarizing the operating procedures specified in subsection (2) of this section shall be installed on or near the degreaser.

(2) Operating requirements:

(a) Exhaust ventilation should not exceed sixty-five (65) cfm per square foot of degreaser opening unless necessary to meet OSHA requirements or control device requirements. Work place fans should not be used near the degreaser opening.

(b) Minimize solvent carry-out by the following measures:

1. Rack parts so that entrainment of solvent is avoided and full drainage is accomplished.

2. Maintain vertical conveyor speed at less than eleven (11) ft/min.

(c) Do not dispose of waste solvent or transfer it to another party such that greater than twenty (20) percent by weight of the waste solvent can evaporate into the atmosphere. Store waste solvent only in closed containers.

(d) Repair solvent leaks immediately or shutdown the degreaser.

(e) Water should not be visually detectable in the solvent exiting the water separator.

(f) Down-time covers shall be placed over entrances and exits of the degreaser immediately after the conveyor and exhaust are shut down and removed just before they are started up.

Section 7. Compliance Timetable. The owner or operator of an affected facility shall be required to complete the following:

(1) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(2) Award the control system contract no later than November 1, 1979.

(3) Initiate on-site construction or installation of emissions control equipment no later than July 1, 1980.

(4) On-site construction or installation of emission control equipment shall be completed no later than May 1, 1981.

(5) Final compliance shall be achieved no later than July 1, 1981.

401 KAR 61:100. Existing insulation of magnet wire operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for insulation of magnet wire.

(2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to a coating bath.

(3) "Coating die" means the device, located between the applicator and the drying oven, which scrapes off excess coating and leaves a thin film of desired thickness.

(4) "Magnet wire" means wire used in such equipment as electrical motors, generators, and transformers which carries an electrical current.

(5) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;

(b) process storage;

(c) applicators;

(d) drying operations including coating die area evaporation, oven drying, baking, curing, and polymerization;

(e) clean up operations;

(f) leaks, spills and disposal of volatile organic compounds;

(g) processing and handling of recovered volatile organic compounds;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compounds it receives from or distributes to each coating line;

(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 6, then that portion shall be considered to be a separate coating line.

(6) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(7) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(8) "Classification date" means the effective date of this regulation.

(9) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under Section 6.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6. The following methods of analyses, filed by reference in 401 KAR 50:015, for coatings shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75 Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Compliance Timetable. The owner or operator of an affected facility shall be required to complete the following:

(1) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(2) Award the control system contract or the exempt coatings and any accompanying process change contracts no later than April 1, 1980.

(3) Inititate on-site construction or installation of emission control equipment or process changes for exempt coatings no later than October 1, 1980.

(4) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than April 1, 1981.

(5) Final compliance shall be achieved no later than July 1, 1981.

Section 6. Exemptions. Any affected facility shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is less than 0.20 kilograms per liter of coating (1.7 pounds per gallon), excluding water, delivered to the applicators associated with the coating line.

401 KAR 61:105. Existing metal furniture surface coating operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) in any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for indoor and/or outdoor metal furniture.

(2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to: dipping, spraying, or flow-coating.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "Prime coat" means the first film of coating applied in a two-coat operation which is responsible for protecting the surface from corrosion and providing for good adhesion of the topcoat.

(5) "Topcoat" means the final film of coating applied in a two-coat operation to obtain desired aesthetic effects.

(6) "Single coat" means a single film coating applied directly to the metal substrate omitting the prime coat.

(7) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat or single coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;
(b) process storage;
(c) applicators;
(d) drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;
(e) clean up operations;
(f) leaks, spills and disposal of volatile organic compounds;
(g) processing and handling of recovered volatile organic compounds;
(h) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;
(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 6, then that portion shall be considered to be a separate coating line.

(8) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one-tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(9) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(10) "Metal furniture" means household and business items including but not limited to; tables, chairs, waste baskets, beds, desks, lockers, benches, shelving, file cabinets, lamps and room dividers.

(11) "Classification date" means the effective date of this regulation.

(12) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under Section 6.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6. The following methods of analyses, filed by reference in 401 KAR 50:015, for coatings shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75 Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Compliance Timetable. The owner or operator of an affected facility shall be required to complete the following:

(1) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(2) Award the control system contract or the exempt coatings and any accompanying process change contracts no later than January 1, 1980.

(3) Initiate on-site construction or installation of emission control equipment or process changes for exempt coatings no later than May 1, 1980.

(4) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than May 1, 1981.

(5) Final compliance shall be achieved no later than August 1, 1981.

Section 6. Exemptions. Any affected facility shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is less than 0.36 kilograms per liter of coating (3.0 pounds per gallon), excluding water, delivered to the applicators associated with the prime, single or topcoat coating line.

401 KAR 61:110. Existing large appliance surface coating operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) in an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) in any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for large appliances such as, but not limited to: doors, cases, lids, panels and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dish washers, trash compactors, and air conditioners.

(2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to dipping or spraying.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "Prime coat" means the first film of coating applied in a two-coat operation.

(5) "Topcoat" means the final film of coating applied in a two-coat operation.

(6) "Single coat" means a single film coating applied directly to the metal substrate omitting the prime coat.

(7) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat or single coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;
(b) process storage;
(c) applicators;
(d) drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;
(e) clean up operations;
(f) leaks, spills and disposal of volatile organic compounds;
(g) processing and handling of recovered volatile organic compounds:
(h) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;
(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 6, then that portion shall be considered to be a separate coating line.

(8) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(9) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(10) "Classification date" means the effective date of this regulation.

(11) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases

where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under Section 6.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6. The following methods of analyses, filed by reference in 401 KAR 50:015, for coatings shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75 Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Compliance Timetable. The owner or operator of an affected facility shall be required to complete the following:

(1) Submit a final control plan for achieving compliance with this regulation no later than October 1, 1979.

(2) Award the control system contract or the exempt coatings and any accompanying process change contracts no later than January 1, 1980.

(3) Initiate on-site construction or installation of emission control equipment or process changes for exempt coatings no later than March 1, 1980.

(4) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than October 1, 1981.

(5) Final compliance shall be achieved no later than January 1, 1982.

Section 6. Exemptions.

(1) Any affected facility shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is less than 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the applicators associated with the prime, single or topcoat coating line.

(2) Repair coating operations for the purpose of repairing scratches and nicks that occur during assembly shall be exempt from the provisions of Section 3.

401 KAR 61:120. Existing fabric, vinyl and paper surface coating operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for fabric, vinyl, or paper.

(2) "Applicator" means the mechanism or device used to apply the coating including but not limited to: roll, knife, or rotogravure coater.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;
(b) process storage;
(c) applicators;

(d) drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) clean up operations;

(f) leaks, spills and disposal of volatile organic compounds;

(g) processing and handling of recovered volatile organic compounds;

(h) For the proposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;

(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 6. then that portion shall be considered to be a separate coating line.

(5) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one-tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(6) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(7) "Fabric coating" means the coating of a textile substrate to impart properties that are not initially present, such as strength, stability, water or acid repellancy, or appearance.

(8) "Vinyl coating" means the coating of vinyl coated fabric or vinyl sheets which includes decorative or protective topcoats or printing.

(9) "Paper coating" means the application of a uniform layer of material across the entire width of a web of paper , pressure sensitive tapes regardless of substrate, related web coating processes on plastic film such as typewriter ribbons, photographic film, magnetic tape, and decorative coatings on metal foil such as gift wrap and packaging , but does not include the printing of paper.

(10) "Knife coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a knife that spreads the coating evenly over the full width of the substrate.

(11) "Roll coating" means the application of a coating material to a substrate by means of hard rubber or steel rolls.

(12) "Rotogravure coating" means the application of a coating material to a substrate by means of a roll coating technique in which the pattern to be applied is etched on the coating roll. The coating material is picked up in these recessed areas and is transferred to the substrate.

(13) "Classification date" means the effective date of this regulation.

(14) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

(15) "Printing" means the formation of words, designs and pictures, usually by a series of application rolls each with only partial coverage. It applies to flexographic and rotogravure processes as applied to publication and packaging printing.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under Section 6.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6. The following methods of analyses, filed by reference in 401 KAR 50:015, for coatings shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75 Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Compliance Timetable. The owner or operator of an affected facility shall be required to complete the following:

(1) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(2) Award the control system contract or the exempt coatings and any accompanying process change contracts no later than May 1, 1980.

(3) Initiate on-site construction or installation of emission control equipment or process changes for exempt coatings no later than November 1, 1980.

(4) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than August 1, 1981.

(5) Final compliance shall be achieved no later than December 1, 1981.

Section 6. Exemptions.

(1) Any affected facility coating fabric or paper shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is less than 0.35 kilograms per liter of coating (2.9 pounds per gallon), excluding water, delivered to the applications associated with the coating line.

(2) Any affected facility coating vinyl shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is less than 0.45 kilograms per liter of coating (3.8 pounds per gallon) excluding water, delivered to the applicators associated with the coating line.

401 KAR 61:125. Existing can surface coating operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) in any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for cans.

(2) "Applicator" means the mechanism or device used to apply the coating including but not limited to spray or roller.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "End sealing compound" means a synthetic rubber compound which is coated onto can ends and functions as a gasket when the end is assembled on the can.

(5) "Exterior base coating" means a coating applied to the exterior of a can to provide exterior protection to the metal and background for the lithographic or printing operation.

(6) "Interior base coating" means a coating applied by roller coater or spray to the interior of a can to provide a protective lining between the can metal and product.

(7) "Interior body spray" means a coating sprayed on the interior of the can body to provide a protective film between the product and the can.

(8) "Overvarnish" means a coating applied directly over ink to reduce the coefficient of friction, to provide gloss and to protect the finish against abrasion and corrosion.

(9) "Three-piece can side-seam spray" means a coating sprayed on the exterior and interior of a welded, cemented or soldered seam to protect the exposed metal.

(10) "Two-piece can exterior end coating" means a coating applied by roller coating or spraying to the exterior end of a can to provide protection to the metal.

(11) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;

(b) process storage;

(c) applicators;

(d) drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) clean up operations;

(f) leaks, spills and disposal of volatile organic compounds;

(g) processing and handling of recovered volatile organic compounds;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;

(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 6, then that portion shall be considered to be a separate coating line.

(12) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one-tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(13) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(14) "Classification date" means the effective date of this regulation.

(15) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to quality for an exemption under Section 6.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6. The following methods of analyses, filed by reference in 401 KAR 50:015, for coating shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75, Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Compliance Timetable. The owner or operator of an affected faciltiy shall be required to complete the following:

(1) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(2) Award the control system contract or the exempt coatings and any accompanying process change contracts no later than January 1, 1980.

(3) Initiate on-site construction or installation of emission control equipment or process changes for exempt coatings no later than May 1, 1980.

(4) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than May 1, 1981.

(5) Final compliance shall be achieved no later than August 1, 1981.

Section 6. Exemptions. Any affected facility shall be exempt from the provision of Section 3 if the volative organic compound content of the coating is:

(1) less than 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the applicators associated with the sheet basecoat (exterior and interior) and overvarnish or, two-piece can exterior (basecoat and overvarnish) coating lines;

(2) less than 0.51 kilograms per liter of coating (4.2 pounds per gallon), excluding water, delivered to the applicators associated with the two and three-piece can interior body spray or two-piece can exterior end (spray or roll coat) coating lines:

(3) less than 0.66 kilograms per liter of coating (5.5 pounds per gallon), excluding water, delivered to the applicators associated with the three-piece can side-seam spray coating line;

(4) less than 0.44 kilograms per liter of coating (3.7 pounds per gallon), excluding water, delivered to the applicators associated with the end sealing compound coating line.

401 KAR 61:130. Existing coil surface coating operations.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) in an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) in any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Affected facility" means a coating line for metal sheets or strips that comes in rolls or coils.

(2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to: roller or spray.

(3) "Quench area" means a chamber where the hot metal exiting the oven is cooled by either a spray of water or a blast of air followed by water cooling.

(4) "Prime coat" means the first film of coating applied in a two-coat operation which is responsible for protecting the surface from corrosion and providing for good adhesion of the topcoat.

(5) "Topcoat" means the final film of coating applied in a two-coat operation to obtain desired aesthetic effects.

(6) "Single coat" means a single film coating applied directly to the metal substrate omitting the prime coat.

(7) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat, or single coatings containing volatile organic compounds. This shall include, but is not limited to:

(a) mixing operations;

(b) process storage;

(c) applicators;

(d) drying operations including, but not limited to, quench area, oven drying, baking, curing, and polymerization;

(e) clean up operations;

(f) leaks, spills and disposal of volatile organic compounds;

(g) processing and handling of recovered volatile organic compounds;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line;

(i) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 6, then that portion shall be considered to be a separate coating line.

(8) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one-tenth (0.1) mm of Hg at conditions of twenty (20) degrees Celsius and 760 mm of Hg.

(9) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to 401 KAR 59:050 or 401 KAR 61:050.

(10) "Classification date" means the effective date of this regulation.

(11) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one (1) interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 3. Standard for Volatile Organic Compounds. No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the volatile organic compounds net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the Department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the Department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the Department of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the Department, performance tests as specified by the Department shall be conducted in order to determine the efficiency of the control device.

(3) With the prior approval of the Department, the owner or operator may elect to effect such changes in the affected facility as are necessary to quality for an exemption under Section 6.

(4) Whenever deemed necessary by the Department, the Department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirments in Section 6. The following methods of analyses, filed by reference in 401 KAR 50:015, for coatings shall be used as applicable except in those cases where the Department determines that other methods would be more appropriate:

(a) ASTM D 1644-75 Method A;
(b) ASTM D 1475-60(74);
(c) ASTM D 2369-73; or
(d) Federal Standard 141 a, Method 4082.1.

Section 5. Compliance Timetable. The owner or operator of an affected facility shall be required to complete the following:

(1) Submit a final control plan for achieving compliance with this regulation no later than January 1, 1980.

(2) Award the control system contract or the exempt coatings and any accompanying process change contracts no later than July 1, 1980.

(3) Initiate on-site construction or installation of emission control equipment or process changes for exempt coatings no later than January 1, 1981.

(4) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than January 1, 1982.

(5) Final compliance shall be achieved no later than April 1, 1982.

Section 5. Exemptions. Any affected facility shall be exempt from the provisions of Section 3 if the volatile organic compound content of the coating is less than 0.31 kilograms per liter of coating (2.6 pounds per gallon), excluding water, delivered to the applicators associated with the prime, single or topcoat coating line.

401 KAR 61:135. Selected existing petroleum refining processes and equipment.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010, or

(2) In any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2. Definitions.

(1) "Affected facility" means vacuum producing systems and process unit turnarounds associated with a petroleum refinery.

(2) "Vacuum producing systems" means equipment which produces a partial vacuum in a vessel.

(3) "Process unit turnaround" means the shutting down, depressurization, and purging of a process unit or vessel.

(4) "Classification date" means the effective date of this regulation.

Section 3. Standard for Hydrocarbons. The owner or operator of an affected facility shall install, operate, and maintain all equipment necessary to accomplish the following:

(1) Vacuum producing systems. All gaseous hydrocarbons emitted from condensers, hot wells, vacuum pumps, and accumulators be collected and vented to a firebox, flare or other control device of equivalent efficiency as determined by the Department.

(2) Process unit turnaround. The gaseous hydrocarbons purged from a process unit or vessel shall be vented to a firebox, flare, or other control device of equivalent efficiency as determined by the Department until the pressure in the process unit is less than five (5) psig.

Section 4. Monitoring and Reporting Requirements.

(1) The owner or operator shall:

(a) Keep a record of each process unit turnaround;

(b) Record the approximate hydrocarbon concentration when the hydrocarbons were first discharged to the atmosphere;

(c) Record the approximate total quantity of hydrocarbons emitted to the atmosphere.

(2) The owner or operator shall retain these records for at least two years and submit them to the Department upon request.

Section 5. Compliance Timetable. The owner or operator of an affected facility shall be required to complete the following:

(1) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(2) Award the control device contract no later than December 1, 1979.

(3) Initiate on-site construction or installation of emissions control equipment no later than July 1, 1980.

(4) On-site construction or installation of emission control equipment shall be completed no later than February 1, 1981.

(5) Final compliance shall be achieved no later than May 1, 1981.

401 KAR 61:140. Existing by-product coke manufacturing plants.

Section 1. Applicability. The provisions of this regulation are applicable to each affect facility commenced before the classification date defined below.

Section 2. Definitions. As used in this regulation all terms not defined herein shall have the meaning given them in 401 KAR 50:010 and 401 KAR 61:005.

(1) "Affected facility" means a by-product coke oven battery.

(2) "Classification date" means April 9, 1972.

(3) "Coke oven battery" means a number of slot-type coking chambers arranged side by side.

(4) "Charging" means the process of conveying coal and dropping it into a coke oven through the charging holes or ports located on top of the oven.

(5) "Coking" means the destructive distillation of coal in the absence of oxygen.

(6) "Coke" means a solid form of carbon resulting from the destructive distillation of coal.

(7) "Coke oven" means a refractory lined, heated, slot-type chamber in which coke is produced.

(8) "Chuck door" means the port for the leveling bar.

(9) "Leveling bar" means a structured steel bar pushed back and forth horizontally through the chuck door and used to eliminate the peaks in the coal charged in the oven.

(10) "Collecting main" means the horizontal manifold connected to the standpipes used to conduct the volatile materials to the by-products plant.

(11) "Larry car" means the apparatus used to charge coal into an empty oven. It is also known as a charging car.

(12) "Pusher machine" means a large apparatus which travels on rails alongside the battery and used to remove doors and push coke from the ovens.

(13) "Gooseneck" means a short curved cast iron refractory lined pipe that conveys the volatiles from the standpipe to the collector main.

(14) "Standpipe" means a short vertical refractory lined pipe which conducts volatiles from an oven through the gooseneck to the collector main.

(15) "Quench" means the process whereby water is used to cool the hot coke.

(16) "Quenching car" mean an apparatus used to convey hot coke to the quenching tower. It is also known as a wharf car.

(17) "Charging period" means for larry car charging systems, the period of time commencing when the first hopper gate is opened and ending when the last topside port lid is replaced. The charging period includes the period of time during which the port lid is reopened in order to sweep spilled coal into the oven.

(18) "Total coke oven doors" means push and coke side doors with the chuck doors considered to be part of the push side doors.

Section 3. Standards for Particulate Matter. No person subject to the provisions of this regulation shall cause, suffer or allow particulate matter to be discharged to the atmosphere from each affected facility or operation of a by-product coke oven battery except as follows:

(1) Coke oven charging: No visible emissions during the charging cycle from the control equipment, the charging ports, the larry cars or the open chuck door, with an opacity greater than twenty (20) percent for a period or periods aggregating more than two (2) minutes in any consecutive sixty (60) minutes.

(2) Battery topside leaks: The number of leaks (any visible emissions except for steam or non-smoking flame) at any time shall not exceed five (5) percent of the total number of potential leaks on the battery topside. The total number of potential leaks on the battery topside is equal to the number of operating ovens multiplied by the number of charging lids and standpipes per oven.

(3) Doors: No visible emission, except non-smoking flame, from more than ten (10) percent of the total coke oven doors on a battery.

(4) Combustion stack: No visible emission (other than water mist or vapor) shall exceed twenty (20) percent opacity from any coke oven combustion stack.

(5) Pushing: At least eighty-five (85) percent of the total particulate matter generated by the pushing operation shall be captured by the control device and the captured emissions cleaned further such that the emission rate from the control device in no case exceeds 0.030 pounds of filterable particulate per ton of coke pushed, averaged over a number of pushes.

(6) Quenching: No visible emissions, except water vapor or mist, shall exceed an opacity of twenty (20) percent during the quenching operations. No process water shall be used for quenching and the quench water shall be at least equal to or better than the quality of the water in the river or stream from which it is drawn. The quench tower draft shall be adequate to ensure that all visible quenching gases exit through the quench tower baffles.

Section 4. Standard for Sulfur Dioxide. Coke oven gas shall not be burned or discharged unless it contains a concentration of sulfur compounds (expressed as sulfur dioxide) that will result in emissions of no more than ninety-five (95) pounds of equivalent sulfur dioxide per million cubic feet of coke oven gas produced. Included in this are all sulfur compounds, expressed as sulfur dioxide, emitted from sulfur recovery equipment used to process the sulfur compounds removed from coke oven gas.

Section 5. Test Methods and Procedures.

(1) Except as provided in 401 KAR 50:045, and subsections (2) and (3) of this section, performance tests used to demonstrate compliance with Sections 3 and 4 shall be conducted according to the following methods (filed by reference in 401 KAR 50:015):

(a) Reference Method 9 for combustion stack opacity,

(b) Reference Method 5 for the particulate mass emission rate for pushing emissions. The front half of the sampling train shall be used to determine the particulate emissions rate with possible modifications to allow high volume sampling and reduced probe-filter temperatures.

(2) Determination of sulfur in coke oven gas. Cleaned coke oven gas and any Claus plant tail gas shall to be sampled for hydrogen sulfide, carbonylsulfide, and carbon disulfide by gas chromatograph separation and flame photometric or thermal conductivity detection. Alternate methods may be approved by the Department. Clean gas and tail gas flow shall be measured by in-line continuous orifice, venturi or elbow tap flow meters. Compliance testing shall consist of simultaneous measurement of sweet (clean) coke oven gas and sulfur recovery tail gas concentrations and flows. Four (4) samples per hour shall be acquired for concentration and flows during a four (4) hour test period. Compliance shall be determined from the arithmetic average of the sixteen (16) values calculated by using the formula in Appendix A of this regulation.

(3) Determination of visible emissions during the oven charging period:

(a) Principle. The visible emissions emitted from charging systems and oven ports are to be determined visually by an observer who is familiar with coke oven battery operations. Observations for sixty (60) consecutive minutes as specified by the emission standard are required unless the standard is exceed in a fewer number of charges.

(b) Procedure. The observer is to stand such that he has a good view of the oven being charged. Upon observing any visible emission exceeding twenty (20) percent opacity, an accumulative stopwatch is started. The watch is stopped when the visible emission drops below twenty (20) percent and is restarted when the visible emission reappears at over twenty (20) percent opacity. The observer is to continue this procedure for the entire charging period. Visible emissions may occur simultaneously from several points during a charge; e.g., from around all drop sleeves at the same time. In this case, the visible emissions are timed collectively, not independently. Also, visible emissions may start from one source immediately after another source stops. This will be timed as one continuous visible emission. The following visible emissions are not to be timed:

1. Visible emissions from burning coal spilled on top of the oven or oven lid during charging;

2. Visible emissions that drift from the top of a larry car hopper, but have already been timed as a visible emission from the drop sleeve below the hopper. When the slide gate closes on a larry car hopper after the coal has been added to the oven, the gate may not provide an airtight seal. On occasion a puff of smoke observed at the drop sleeve shrouds will be forced past the slide gate up into the larry car hopper. From there the smoke may drift from the top of the larry car hopper over a much longer period than it was visible at the shroud. However, if the larry car hopper does not have a slide gate or the slide gate is left open or only partially closed, visible emissions may quickly pass through the larry car hopper without being observed at the shroud. In this case, the emissions from the larry car hopper will appear as a strong surge of smoke and shall be timed.

(c) Recording charging emissions. The time recorded on the stop watch is the total time that visible emission exceeding twenty (20) percent opacity were observed during the charge. For any consecutive sixty (60) minutes, one value of the seconds of visible emissions over twenty (20) percent opacity as measured by the stopwatch shall be recorded.

(4) Determination of visible emissions from coke oven topside leaks:

(a) Principle. The visible emissions produced from leaking offtake systems, and topside lids are determined visually by an observer who is familiar with coke oven battery operations.

(b) Procedure. The observer shall inspect the coke oven battery by travelling the length of the battery topside at a steady pace, pausing only to make appropriate entries on the inspection report. Travel at a normal walking pace one lenth of the coke oven battery shall constitute a run taking approximately four (4) minutes (for a seventy (70) oven battery) to complete. In performing a run, the observer shall walk the centerline of the battery looking far enough ahead (two (2) or four (4) ovens) of his travel to easily see the oven lids, offtake systems, or collection mains. If the emissions to be inspected cannot be observed from the battery centerline, an alternative location may be used (e.g., a catwalk). During any one run, the observer shall record the number of total visible emissions from oven lids, offtake systems, and collection mains. The total number of leaks from the topside shall be recorded on the inspection report sheet. The following emissions shall not be recorded:

1. Visible emissions from lids and standpipe caps that are opened during a decarbonization period or charging period.

2. Visible emissions caused by maintenance work in progress at an oven.

3. Steam emissions; this includes steam caused by the vaporization of wet luting material.

(c) Determination of percent topside leaks. The total number of leaks shall be observed during a run and then the percent of topside leaks shall be determined by using the formula given in Appendix B to this regulation.

(5) Door inspection procedure:

(a) Observation. The inspector shall make his observations of door emissions from a location as close to the battery as safety and visibility conditions permit, but generally outside of the pusher machine or hot car tracks. The inspector may move to a closer observation point to determine the source of an emission. The inspector shall start the inspection procedure with an oven at either end of the battery and on either the push side or the coke side of the battery. The inspector shall observe and record any visible emission from the door. Visible emissions from the sealing edge around the perimeter of a door, or, in the case of the pusher side, from the door and the chuck door will be considered as door emissions. Visible emissions from structural leaks, such as buckstay or lintel leaks, will not be considered as door emissions. The inspector will then move to the adjacent door and check for door emissions in a like manner. The inspector will continue this procedure down the entire length of the battery. If a temporary machine obstruction occurs blocking his view of a series of ovens, he may bypass those ovens and continue down the remainder of the battery, returning to check the bypassed ovens when he has completed that side of the battery. After the inspector has observed the doors on one side of a battery, he shall then proceed directly to the opposite side of the battery and again start at one end of the battery repeating the same procedure as for the previous side.

(b) Determination of percent leaking doors. The total number of leaking doors shall be observed on both sides of the coke oven battery and then the percent of leaking doors shall be determined using the formula given in Appendix C to this regulation.

(6) Determination of quenching visible emissions. The inspector shall make his observations of quenching emissions from a position where he can observe the quench plume. The inspector observes all emissions from the time the wharf car enters the quench tower until the time it leaves the tower after the quench. The maximum opacity of the plume observed against a contrasting background is recorded. If water vapor or mist is present, the opacity is determined after the water vapor or mist is no longer visible in the plume.

Section 6. Compliance Timetable. The owner or operator shall demonstrate compliance with Section 3(5) on or before December 31, 1980. Compliance with all other provisions of this regulation shall have been demonstrated on or before the effective date of this regulation.

APPENDIX A TO 401 KAR 61:140

Formula for determining sulfur compounds (expressed as SO_2) contained in coke oven gas.

$$\text{Sulfur compounds in coke oven gas} = \frac{C_{swg} V_{swg} + C_{tg} V_{tg}}{V_{fg}}$$

Where:

C_{swg} = the concentration of total reduced sulfur in the sweet gas expressed as SO_2;

C_{tg} = the concentration of total reduced sulfur in the tail gas expressed as SO_2;

and

V_{swg}, V_{tg}, V_{fg} = flow rates of sweet gas, tail gas and foul gas, respectively.

APPENDIX B TO 401 KAR 61:140

Formula for determining percent topside leaks.

$$\text{Percent topside leaks} = \frac{\text{total number of leaks observed during run}}{\text{total number of potential leaks}} \times 100$$

Where:

Total number of potential leaks = Number of operating ovens X (charging lids/oven + standpipes/oven)

APPENDIX C TO 401 KAR 61:140

Formula for determining the percent door leaks.

$$\text{Door leaks (percent)} = \frac{\text{total number of leaking doors observed}}{2 \times \text{number of operating ovens in the battery}} \times 100$$

401 KAR 61:145. Existing petroleum refineries.

Section 1. Applicability. The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below.

Section 2. Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010 and 401 KAR 61:005.

(1) "Affected facility" means sulfur recovery units, fluid catalytic cracking unit regenerators, fluid catalytic cracking unit incinerator waste heat boilers and fuel gas combustion devices at a petroleum refinery in any county classified VA with respect to sulfur dioxide.

(2) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or reforming of unfinished petroleum derivatives.

(3) "Petroleum" means the crude oil removed from the earth and the oils derived from tar sands, shale and coal.

(4) "Process gas" means any gas generated by a petroleum refinery process unit, except fuel gas and process upset gas as defined in this section.

(5) "Fuel gas" means any gas which is generated by a petroleum refinery process unit and which is combusted, including any gaseous mixture of natural gas and fuel gas which is combusted.

(6) "Process upset gas" means any gas generated by a petroleum refinery process unit as a result of startup, shutdown, upset or malfunction.

(7) "Refinery process unit" means any segment of the petroleum refinery in which a specific processing operation is conducted.

(8) "Fuel gas combustion device" means any equipment, such as process heaters, boilers and flares used to combust fuel gas, but does not include fluid coking unit and fluid catalytic cracking unit incinerator-waste heat boilers , facilities combusting coke oven gas in a by-product coke manufacturing plant, or facilities in which gases are combusted to produce sulfur or sulfuric acid.

(9) "Classification date" means the effective date of this regulation.

Section 3.

Standard for Sulfur Dioxide.

(1) No owner or operator subject to the provisions of this regulation shall burn in any fuel gas combustion device any fuel gas which contains hydrogen sulfide in excess of 230 mg/dscm (0.10 gr/dscf), except as provided in subsection (2) of this section. The combustion of process upset gas in a flare, or the combustion in a flare of process gas or fuel gas which is released to the flare as a result of relief valve leakage, is exempt from this section.

(2) The owner or operator may elect to treat the gases resulting from the combustion of fuel gas in a manner which limits the release of sulfur dioxide to the atmosphere if it is shown to the satisfaction of the Department that this prevents sulfur dioxide emissions as effectively as compliance with the requirements of subsection (1) of this section.

(3)[

No owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from any Claus sulfur recovery plant any gases containing in excess of:

(a) 0.025 percent by volume of sulfur dioxide at zero percent oxygen on a dry basis if emissions are controlled by an oxidation control system, or a reduction control system followed by incineration; or

(b) 0.030 percent by volume of reduced sulfur compounds and 0.0010 percent by volume of hydrogen sulfide calculated as sulfur dioxide at zero percent oxygen on a dry basis if emissions are controlled by a reduction control system not followed by incineration.

Section 4. Monitoring and Reporting.

(1) For any fluid catalytic cracking unit catalyst regenerator [which is subject to Section 3 and] which utilizes an incinerator-waste heat boiler to combust the exhaust gases from the catalyst regenerator, the owner or operator shall record daily the conversion factors used to convert monitored data (ppm) into units of the standard (lb/hr), the data used to calculate the conversion factor and the hourly emission rate in pounds per hour of sulfur dioxide

(2) For the purpose of reports under 401 KAR 61:005, periods of excess emissions that shall be reported for sulfur dioxide are defined as follows:

(a)

Any three hour period during which the average concentration of hydrogen sulfide in any fuel gas combusted in any fuel gas combustion device subject to Section 3 (1) exceeds 230 mg/dscm (0.10 gr/dscf), if compliance is achieved by removing hydrogen sulfide from the fuel gas before it is burned; or any three hour period during which the average concentration of sulfur dioxide in the gases discharged into the atmosphere from any fuel gas combustion device subject to Section 3 (2) exceeds the level specified in Section 3 (2) if compliance is achieved by removing sulfur dioxide from the combusted fuel gases.

(b) Any twelve hour period during which the average concentration of sulfur dioxide in the gases discharged into the atmosphere from any Claus sulfur recovery plant subject to Section 3 (3) exceeds 250 ppm at zero percent oxygen on a dry basis if compliance with Section 3(3) is achieved through the use of an oxidation control system or a reduction control system followed by incineration; or any twelve hour period during which the average concentration of hydrogen sulfide or reduced sulfur compounds in the gases discharged into the atmosphere of any Claus sulfur plant subject to Section 3(3) exceeds ten (10) ppm or 300 ppm, respectively, at zero percent oxygen and on a dry basis if compliance is achieved through the use of a reduction control system not followed by incineration.

(c) Any six hour period during which the average emissions (arithmetic average of six contiguous one hour periods) of sulfur dioxide as measured by a continuous monitoring system for a fluid catalyst cracking unit exceed 640.0 pounds per hour

Section 5. Test Methods and Procedures (filed by reference in 401 KAR 50:015).

(1)

For the purpose of determining compliance with Section 3 (1) and (2) , Reference Method 11 shall be used to determine the concentration of hydrogen sulfide and Reference Method 6 shall be used to determine the concentration of sulfur dioxide.

(a) If Reference Method 11 is used, the gases sampled shall be introduced into the sampling train at approximately atmospheric pressure. Where refinery fuel gas lines are operating at pressures substantially above atmosphere, this may be accomplished with a flow control valve. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line. The minimum sampling time shall be ten (10) minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples of equal sampling time shall constitute one run. Samples shall be taken at approximately one (1) hour intervals. For most fuel gases, sample times exceeding twenty (20) minutes may result in depletion of the collecting solution, although fuel gases containing low concentrations of hydrogen sulfide may necessitate sampling for longer periods of time.

(b) If Reference Method 6 is used, Reference Method 1 shall be used for velocity traverses and Reference Method 2 for determining velocity and volumetric flow rate. The sampling site for determining sulfur dioxide concentration by Reference Method 6 shall be the same as for determining volumetric flow rate by Reference Method 2. The sampling point in the duct for determining sulfur dioxide concentration by Reference Method 6 shall be at the centroid of the cross section if the cross sectional area is less than five (5) square meters (54 square feet) or at a point no closer to the walls than one (1) meter (39 inches) if the cross sectional area is five (5) square meters or more and the centroid is more than one meter from the wall. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. The minimum sampling time shall be ten (10) minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples of equal sampling time shall constitute one run. Samples shall be taken at approximately one (1) hour intervals.

(2) For the purpose of determining compliance with Section 3 (3), Reference Method 6 shall be used to determine the concentration of sulfur dioxide and Reference Method 15 shall be used to determine the concentration of sulfur dioxide and reduced sulfur compounds.

(a) If Reference Method 6 is used, the procedure outlined in subsection (1) (b) of this section shall be followed except that each run shall span a minimum of four (4) consecutive hours of continuous sampling. A number of separate samples may be taken for each run, provided the total sampling time of these samples adds up to a minimum of four consecutive hours. Where more than one sample is used, the average sulfur dioxide concentration for the run shall be calculated as the time weighted average of the sulfur dioxide concentration for each sample according to the formula in Appendix A of this regulation.

(b) If Reference Method 15 is used, each run shall consist of sixteen (16) samples taken over a minimum of three hours. The sampling point shall be at the centroid of the cross section of the duct if the cross sectional area is less than five (5) square meters (54 square feet) or at a point no closer to the walls than one (1) meter (39 inches) if the cross sectional area is five (5) square meters or more and the centroid is more than one (1) meter from the wall. To insure minimum residence time for the sample inside the sample lines, the sampling rate shall be at least three (3) liters/minute (0.1 cfm). The sulfur dioxide equivalent for each run shall be calculated as the arithmetic average of the sulfur dioxide equivalent of each sample during the run. Reference Method 4 shall be used to determine the moisture content of the gases. The sampling point for Reference Method 4 shall be adjacent to the sampling point for Reference Method 15. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. Each run shall span a minimum of four (4) consecutive hours of continuous sampling. A number of separate samples may be taken for each run provided the total sampling time of these samples adds up to a minimum of four (4) consecutive hours. Where more than one (1) sample is used, the average moisture content for the run shall be calculated as the time weighted average of the moisture content of each sample according to the formula in Appendix B of this regulation.

Section 6 Compliance Timetable.

(1) The owner or operator of a sulfur recovery plant shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with Section 3(3) no later than September 1, 1979.

(b) Award the control system contract no later than December 1, 1979.

(c) Initiate on-site construction or installation of emission control equipment by October 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than May 1, 1981.

(e) Final compliance shall be achieved no later than July 1, 1981.

(2) The owner or operator shall be required to demonstrate compliance with all other provisions of this regulation no later than the effective date of this regulation.

APPENDIX A TO 401 KAR 61:145
Time weighted average of SO_2 concentration

$$C_R = \sum_{i=1}^{N} C_{Si} \frac{t_{Si}}{T}$$

Where:

C_R = SO_2 concentration for the run.

N = Number of samples.

C_{Si} = SO_2 concentration for sample i.

t_{Si} = Continuous sampling time of sample i.

T = Total continuous sampling time of all N samples.

APPENDIX B TO 401 KAR 61:145

Equation for the time weighted average of the moisture content

$$B_{wo} = \sum_{i=1}^{N} B_{Si} \frac{t_{si}}{T}$$

Where:

B_{wo} = Proportion by volume of water vapor in the gas stream for the run.

N = Number of samples.

B_{si} = Proportion by volume of water vapor in the gas stream for the sample i.

t_{si} = Continuous sampling time for sample i.

T = Total continuous sampling time of all N samples.

CHAPTER IV

CONTROL STRATEGY

SULFUR OXIDES AND PARTICULATE MATTER

4.0 BACKGROUND

4.0.1 General

The Commonwealth of Kentucky submitted to the EPA Administrator an implementation plan on February 8, 1972. This plan contained a chapter such as this entitled "Control Strategy, Sulfur Oxides and Particulate Matter" which was based on computations made by the former Kentucky Air Pollution Control Commission and the Environmental Protection Agency. The plan was approved by the EPA's Administrator of May 31, 1972.

On June 28, 1973, a decision of the U.S. Court of Appeals for the Sixth Circuit in the Case of "Buckeye Power Company, et al v. Environmental Protection Agency", 481 F. 2 d 162, and two related cases, vacated the Administrator's approval of the Kentucky plan and remanded the case to the Environmental Protection Agency for compliance with Section 553 of the Administrative Procedures Act, viz., to take comments, data, or other evidence from interested parties, and to express the basis for administrative actions.

Consequently, on December 5, 1973, the Commonwealth of Kentucky resubmitted to the Administrator the Kentucky Implementation Plan with one addition, AP-11 relating to the control of indirect sources.

On August 15, 1974, the plan was approved by the EPA Administrator with one exception, namely, section 1 (b) of Kentucky Air Pollution Regulation AP-1 as related to Alternate Control Strategy provision of the plan. This provision was disapproved as failing to meet the requirements of 40 CFR 51.12. The two-year extension originally granted for achieving primary sulfur dioxide standards in the Louisville Interstate AQCR was reaffirmed.

In his approval of the plan, the Administrator of the Environmental Protection Agency encouraged the Commonwealth of Kentucky to re-examine its sulfur dioxide strategy to determine if it can be modified without jeopardizing the attainment and maintenance of national standards. Since the supply of low sulfur fuels is currently limited, the Administrator, in accordance with the Environmental Protection Agency's Clean Fuel Policy, subsequently invited the Commonwealth of Kentucky to re-examine the effects of its sulfur oxide regulations to determine whether less stringent limits might not, in certain portions of the State, adequately attain primary ambient air quality standards.

In compliance with this request, the Commonwealth of Kentucky with the assistance of EPA Region IV, Air Programs Office in Atlanta, Georgia, developed new strategies to provide the basis for regulation revisions that will reduce omissions to levels that allow ambient air quality to meet national primary standards and, at the same time, minimize the technical and economic burden to all concerned.

This revised chapter presents justification for the regulation revision.

4.0.2 Control Strategy

An emission control strategy consists of a set of compatible emission standards. Each standard limits emission from specific types of operations, e.g., fuel combustion, industrial process, or solid waste disposal, and the combination of the several standards included within each strategy defines the allowable emission levels from each source in an air quality control region or a county within a State.

The "example region" concept was used in the original plan for strategy development for the control of sulfur oxides and particulates. The Louisville AQCR was used as an example region. The use of this concept in 1971 is one of the primary causes of "over-kill" in the old regulations. This new revision did not use this concept in developing the strategy for sulfur dioxide; instead explicit control strategy testing was performed for each region and pollutant affected by this revision. Since no revision was proposed for particulate matter control strategy the original concept was retained as a method of demonstration.

The alternate control strategy which was provided by the old regulations and was disapproved by EPA's Administrator was removed from the revised regulations.

4.1 SULFUR DIOXIDE

4.1.1 Procedure

Standards for control of sulfur dioxide were for the most part formulated on an industry-by-industry basis. Fuel burning operations represented the largest single source of sulfur dioxide; consequently, these operations have been given the most attention. Other SO_2 limiting regulations were not substantially changed.

Standards normally take the form of either a limitation on the allowable sulfur content of the fuel burned, or a limitation of the pounds of sulfur dioxide which can be emitted per million BTUs of heat input value of fuel. The Commonwealth of Kentucky has selected the latter type of standard to allow the use of the high sulfur coal mined in Western Kentucky and to lend to the installation of flue gas desulfurization units were necessary to meet tha ambient air quality standards.

Strategies based on the limitation of sulfur dioxide emissions were applied using mathematical diffusion modeling techniques to demonstrate the attainment and maintenance of the ambient air quality standards. These techniques are as follows:

(1) 24-Hour Power Plant Model

(2) Air Quality Display Model

The 24-hour model was used on individual power plants to determine their required emisssion to meet the 24-hour ambient air quality standards of 365/ $\mu g/m^3$ (0.14 ppm). The second model was used to define the allowable emission rates from multiple sources in an area where these sources' emissions might lead to a violation of the annual ambient air quality standard of 80 $\mu g/m^3$ (0.4 ppm). This was deemed to be necessary for only a small number of areas, based on the density of these fuel burning operations. The more restrictive results of the two models (annual or short-term) would be the determining factor for selecting the emission standard in a region, county or a group of counties where the impact of these plants was determined to occur.

Modeling was done by the staff of EPA Region IV, the Walden Research Corporation under EPA contract, and the staff of the Division of Air Pollution, Kentucky State Department for Natural Resources and Environmental Protection.

(1) Nominal Load Case - This presents the maximum concentration calculated by the model based upon normal operating rate.

(2) Maximum Load Case - This case was calculated assuming the plant to be operating at full capacity during the day.

Ground-level concentrations arising from nominal and maximum operating loads can be expected to differ due to the joint effect of changes in emission rates, with corresponding changes in stack gas exit velocity and temperature. The interaction of these factors can produce higher concentrations under either nominal or maximum load conditions. Modeling of both cases permits a reasonable estimate of the range of possible values and identification of the maximum concentration case. Regulation changes are based on the highest predicted concentration, whether from nominal or maximum case.

A brief description of the diffusion modeling methodology used is included in this section. It should be noted that the control strategies were developed in accordance with the requirements given in EPA's regulation of 40 CFR Part 51.12 and 51.13.

4.1.1.1 24-Hour Power Plant Model (also referred to as CRS-1)

The model used to estimate the short-term concentration is one developed by the Meteorology Laboratory, EPA. This model is designed to estimate concentrations due to sources at a single location for averaging times of 1 hour, 24 hours and 1 year, with emphasis on the 24-hour value.

The model is a Gaussian plume model using diffusion coefficients based on Turner[1]. Concentrations are estimated for each hour of the year based on the wind direction (in increments of ten degrees), wind speed, mixing height, and Pasquill stability class. For the 1 and 24-hour values, it is assumed that the pollutant does not "decay" significantly between the source and the receptors because of the short travel involved. Also, decay depends on a number of meteorological variables and might well be insignificant when the meteorological conditions occur which lead to highest sulfur dioxide concentrations.

Meteorological data for 1964 were used. The reasons for this choice are:

(1) Data from earlier years did not have sufficient resolution in the wind direction, and

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[1] Turner, D.B., "Workbook of Atmospheric Dispersion Estimates", U.S. Department of Health, Education and Welfare, PHS Publication No. 999-AP-26 (rev. 1970).

(2) data from subsequent years are readily available on magnetic tape for every third hour only.

Mixing height data were obtained from the twice-a-day upper air observations made at the nearest upper air station. Hourly mixing heights were estimated by the model using an objective interpolation scheme.

To simulate the effect of elevated terrain in the vicinity of the plant sites, a ground plume displacement procedure was used in the modeling analysis. This procedure consists of adjusting (decreasing) the effective height of the plant stacks by an amount equal to the difference in elevation between the plant site and the average surrounding terrain. The "reduced" stack height is input to the diffusion model described above.

When a power plant is located in a valley, a modification of the 24-hour model, the valley model, was applied. The model estimates the ground level concentration at 112 receptors at the intersection of 16 radials 22.5° apart and 7 concentric circles at equal distances from the center of emission points. The model uses a class average wind speed of 2.5 m/sec and a slightly stable atmospheric condition (Class E). These conditions being representative to a valley situation. At night in rural situations, the model assumes that a stable atmosphere exists upward from ground level. The primary assumption invoked is that a given meteorological condition exists for 6 hours of a 24-hour period during which a particular source can affect a particular receptor.

Since only power plant operations were being modeled, it was not possible, in general, to calibrate the model using measured air quality data. The calculated values of concentration are considered to be reasonable estimates of anticipated concentrations using best available modeling techniques.

Where interactions between a number of stacks of a power plant are significant, supplementary calculations, using a modified Model (PTMTP-W), account for the impact of two or more stacks.

4.1.1.2 Air Quality Display Model (AQDM)

The AQDM, a climatological model based on ideas of Martin and Tikvart, (TRW Systems Group, 1969; Martin and Tikvart, 1968; and Martin, 1971), considers the joint frequency distribution of wind direction to 16 points, wind speed in 6 classes, and stability categories in 5 classes. Computation for a receptor point are made by considering the contribution of each point and area source to this receptor. Separate calculations are made for each speed class/stability class combination for wind direction sector about the receptor that contains the source. For area sources a modification of the virtual point source method is used. Estimation of area source heights are assumed to be the effective height of the area source. The effective heights can be different for each area source. Briggs' plume rise equation (Briggs, 1969) were used to estimate the effective height of point sources.

The Louisvill Interstate Air Quality Control Region was modeled using the AWDM Model. Due to the existence of single major sources in the other areas of the State running AQDM for these areas were found to be unnecessary and reliance on only the 24-hour model was sufficient.

4.1.1.3 Source Data

Data for sources modeled were taken from the emissions inventory listing of 1972 conducted by the Division of Air Pollution and 1973 emissions inventory of Jefferson County (Appendix A to this Plan). Supplementary data for the large power plants were taken directly from the Federal Power Commission (FPC Form 67) and the data submitted by individual plants as part of the requirements of Section 114 of the Clean Air Act. In all cases of 24-hour modeling the actual emission was used to work out a ratio of reduction necessary to meet the 365 $\mu g/m^3$ standard. AWDM run for the Louisville region was run using 1973 data.

For purposes of this study, data were projected to 1977, to include scheduled units coming on line since generally is the target year for attainment of at least the primary air quality standards for sulfur dioxide. The planned units are Louisville Gas and Electric Mill Creek Unit # 4 in Jefferson County, Cincinnati Gas and Electric East Bend Unit in Boone County, and Kentucky Utilities Ghent Unit # 2 in Carroll County.

4.1.1.4 Measured Ambient Background Levels

A survey of existing ambient air quality data throughout the State was made to determine the appropriate background level, 24-hour maximum, to use in the 24-hour modeling of individual power plants. This background represents the effect of all sources on the monitoring station in the vicinity of the plant in question after elimination of the direct influence of that plant on the monitoring station. The technique used in this case is through examining the meteorological data of the nearest weather station and the resultant wind direction was determined for each sampling day. The measured data at the sampling day was ignored if the resultant wind during that day was within a section of ± 11° of a line drawn between the power plant in question and the monitoring station. The remaining data, which represent the influence of the remaining sources were examined and the record highest 24-hour average was used as the background applicable for the plant in question. These levels are shown in Table 4.4.

In the case where measured air monitoring data were not available, a background of 50 $\mu g/m^3$ was considered to be appropriate.

The background level used for an annual mean for the AQDM was selected to be 0 $\mu g/m^3$.

4.1.1.5 Classification of Counties

The class into which a given county falls has been determined by mathematical atmospheric diffusion models and other methods which evaluate those factors which necessitate limits on sulfur dioxide emissions. These factors include but were not limited to:

(1) Total sulfur dioxide emissions;

(2) Spatial distribution of sulfur dioxide sources;

(3) Effects of single large sources;

(4) Existing measured air quality;

(5) Topographical features of the county;

(6) Contribution to background levels.

4.1.2 Adopted Changes

The changes in SO_2 emission limitations are primarily relaxations on indirect heat exchangers of all size ranges, especially those burning solid fuels. Emission limitations for small oil-fired boilers or for large oil-fired boilers which remained in less restrictive counties have been relaxed slightly.

The old regulations are shown in Table 4.1 and the new regulations are shown in Table 4.2.

TABLE 4.1

PREVIOUS REGULATION OF ALLOWABLE SULFUR DIOXIDE EMISSIONS FROM INDIRECT HEAT EXCHANGERS AND PRIORITY CLASSIFICATION OF AIR QUALITY CONTROL REGIONS

MM BTU/HOUR HEAT INPUT	EXISTING INSTALLATIONS					
	PRIORITY I		PRIORITY II		PRIORITY III	
(fuel:)	Liquid	Solid	Liquid	Solid	Liquid	Solid
10 or less	2.50	4.0	2.5	4.0	2.50	4.0
50	1.41	2.2	2.02	3.0	2.32	3.8
100	1.11	1.7	1.85	2.7	2.24	3.7
150	0.96	1.5	1.75	2.5	2.20	3.7
250	0.8	1.2	1.64	2.3	2.14	3.6
500	0.8	1.2	1.5	2.0	2.07	3.6
1,000	0.8	1.2	1.5	2.0	2.00	3.5
10,000	0.8	1.2	1.5	2.0	2.00	3.5

TABLE 4.2

REGULATIONS IN EFFECT (JULY 2, 1975) OF ALLOWABLE SULFUR DIOXIDE EMISSION BASED ON HEAT INPUT CAPACITY FOR EXISTING INDIRECT HEAT EXCHANGERS AND NEW FACILITIES

MM BTU/HOUR HEAT INPUT	ALLOWABLE EMISSION POUNDS/MM BTU									
	NEW FACILITIES AND COUNTIES CLASS I		COUNTIES CLASS II		COUNTIES CLASS III		COUNTIES CLASS IV		COUNTIES CLASS V	
(Fuel:)	Liquid	Solid	Liquid	Solid	Liquid	Solid	Liquid	Solid	Liquid	Solid
10 or less	3.0	5.0	4.0	6.0	4.6	7.0	5.4	5.0	6.0	9.0
50	1.5	2.4	2.2	3.3	3.1	4.7	4.3	6.4	4.9	7.3
100	1.2	1.8	1.7	2.5	2.6	4.0	4.0	5.9	4.3	6.7
150	1.0	1.5	1.5	2.2	2.4	3.6	3.7	5.6	4.3	6.4
200	0.9	1.3	1.3	2.0	2.2	3.4	3.6	5.4	4.1	6.2
250 or greater	0.8	1.2	1.2	1.8	2.1	3.2	3.5	5.2	4.0	6.0

Interpolation of allowable emissions for rated capacity values between 10 and 250 million BTU heat input may be accomplished by use of the equations shown below for the appropriate fuel specified. In all equations Y = allowable sulfur dioxide emission in pounds per million BTU heat input and X = millions of BTU per hour heat input capacity rating.

COUNTY CLASS	LIQUID FUEL	SOLID FUEL
New and I	$Y = 7.7223\ X^{-0.4106}$	$Y = 13.8781\ X^{-0.4474}$
II	$Y = 9.4044\ X^{-0.3740}$	$Y = 14.1967\ X^{-0.3740}$
III	$Y = 8.060\ X^{-0.2346}$	$Y = 12.2539\ X^{-0.2432}$
IV	$Y = 7.3610\ X^{-0.1347}$	$Y = 10.8875\ X^{-0.1338}$
V	$Y = 8.0187\ X^{-0.1240}$	$Y = 12.0254\ X^{-0.1260}$

4.1.3 Analysis

Detailed modeling results are retained by this agency for examination by the EPA Administrator. It should be emphasized here that the regulations were applied in these models, based on individual boiler input capacity rather than the combined capacity of the source, which the regulations allow. Consequently, the results of the analysis were conservative figures.

4.1.3.1 Class I Counties

The analysis for these two counties (Jefferson and McCracken) consists of 24-hour models run on all power plants (except small industrial units) and an AQDM run for Louisville Interstate AQCR. The 24-hour model showed, that the emissions limitations for Class I counties are adequate to attain the ambient air quality 24-hour standard.

The AQDM correlation curves resulting from modeling the 1973 emissions inventory and calibrated with the 1973 air quality data is shown in Figure 4.1. Isopleths showing air quality conditions existing in 1973 are presented in Figure 4.2. Isopleths showing estimated air quality levels following application of emission standards are presented in Figure 4.3. It can be seen that the annual arithmetic mean standard of 80 ug/m^3 was attained through the application of the control regulations.

4.1.3.2 Class II Counties

The analysis for these 3 counties (Bell, Clark, Woodford) consists of 24-hour runs around 3 major sources. The lack of other major SO_2 sources negated the need for AQDM runs. The plants are all located in rugged terrain; therefore stringent limitations are required in spite of the relatively small sizes of the plants and the absence of multiple source interactions.

While the absolute value of the modeling result, Table 4.3, does not equate to the exact emission limitation in all cases, it was chosen for the following reasons:

(1) The sources affected by the limitation had, in most cases, prior to regulation development, located and contracted for coal which meets this new limitation. Lower sulfur fuel would be difficult to obtain and would provide little additional emission reduction benefit.

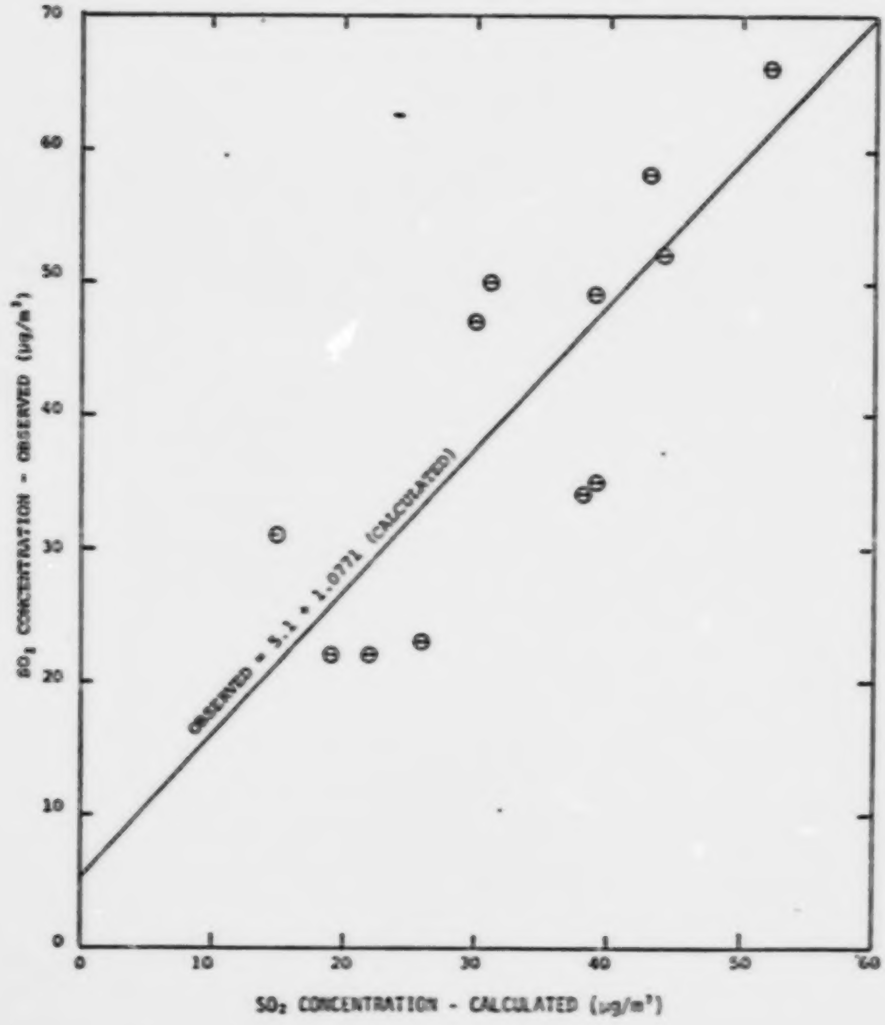

FIGURE 4.1 - SULFUR DIOXIDE CORRELATION CURVE

LOUISVILLE INTERSTATE
Air Quality Control Region

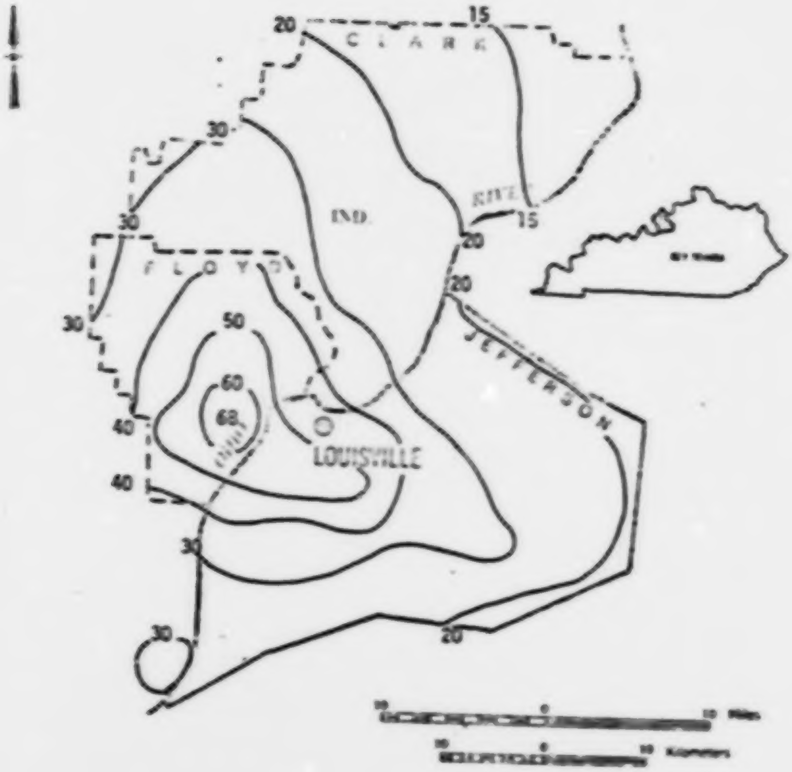

FIGURE 4.2 ANNUAL ARITHMETIC CONCENTRATIONS
OF SULFUR DIOXIDE IN THE LOUSIVILLE INTERSTATE AQCR
AS ESTIMATED BY THE DIFFUSION MODEL (EXISTING CONDITIONS 1973)

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LOUISVILLE INTERSTATE
Air Quality Control Region

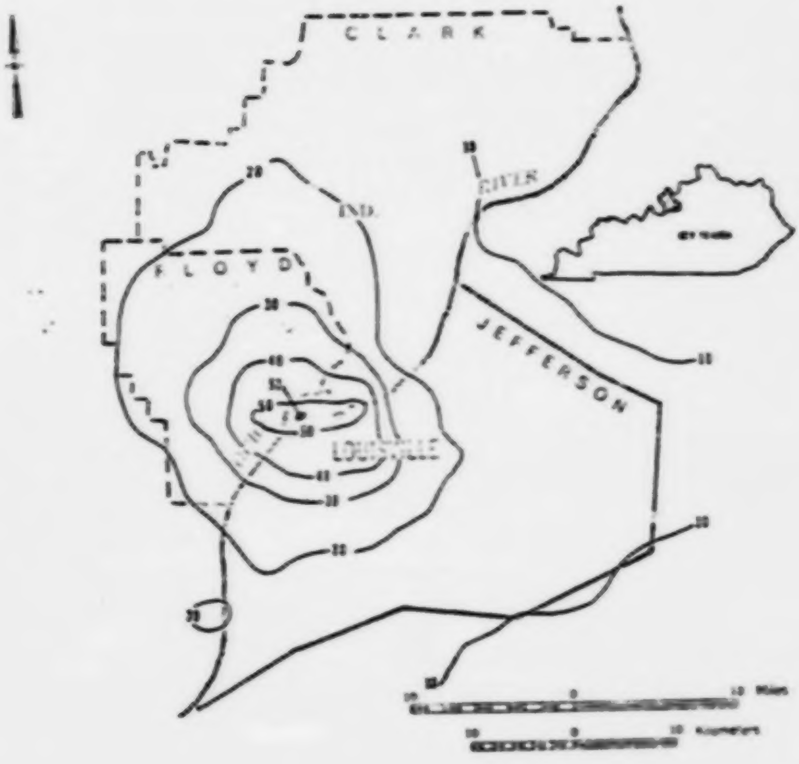


FIGURE 4.3 ANNUAL ARITHMETIC MEAN CONCENTRATIONS OF SULFUR DIOXIDE IN THE LOUISVILLE INTERSTATE A.Q.C.R AS ESTIMATED BY THE DIFFUSION MODEL (AFTER THE APPLICATION OF CONTROL REGULATIONS JULY 1977)

TABLE 4.3

RESULTS OF 24-HOUR MODELING IN MAJOR POWER PLANT IN KENTUCKY (250 MM BTU/HR AND OVER)

CLASS	COUNTY	PLANT	BACKGROUND ug/m^3	REQUIRED LB SO_2/ MM BTU TO MEET 24-HOUR. STANDARD	ADOPTED EMISSION STANDARD lb. SO_2/MM BTU
I	Jefferson*	Paddy's Run	127	2.7	1.2
		Cane Run	112	1.8	
		Mill Creek	75	5.5	
	McCracken	Shawnee	70	1.5	
II	Woodford	Tyrone	20	1.9	1.8
	Clark	Dale	34	1.0	
	Bell	Pineville	50	0.4	
III	Pulaski	Cooper	39	3.2	3.2
IV	Webster	Robert Reid	50	5.2	5.2
	Muhlenburg	Green River	25	5.2	
		Paradise	25	5.1	
	Hancock	Coleman	45	5.0	
V	Daviess	Owensboro M.U.	55	8.6	6
		Elmer Smith	64	6.6	
	Henderson	Henderson	67	6.0	
	Mercer	Brown	20	7.0	
	Carroll	Ghent	65	19	
	Lawrence	Big Sandy	22	25	
	All Others				

*AQDM also run

(2) The emission limitation is not substantially greater than the commonly accepted best technology available for power plants of the size and age of those in question.

(3) The bulk of the generating capacity in these 3 counties is used primarily for peaking and/or emergency purposes.

4.1.3.3 Class III County

The analysis for this county (Pulaski) consisted of a 24-hour run for the single point source in the county. The model shows, Table 4.3, that the ambient standard will be met where the emission standard is applied. No other quantitative analysis was deemed necessary, due to the absence of other large sources or multiple source interaction.

4.1.3.4 Class IV Counties

The analysis of these 3 counties (Muhlenburg, Webster, and Hancock) consisted of point source runs for 4 point sources for 24-hour violations. These showed, Table 4.3, that no violations will occur upon the application of the adopted emission standard. No other quantitative analysis was deemed necessary, due to the absence of other large sources or multiple source interactions.

4.1.3.5 Class V Counties

The analysis for the remaining counties consists of 24-hour point source runs for major SO_2 emitters and AQDMS for 1 area where major SO_2 sources are in close proximity to one another and/or multiple smaller SO_2 sources, or where multiple smaller SO_2 sources are numerous enough to justify concern. Sparsely populated counties or those with no substanital SO_2 emitters were not modeled. All ambient standards were found to be met by the adopted emission limitions (Table 4.3 and AQDM result).

4.1.4 General Comments

Air quality data for Calendar Year 1974 (submitted as an update to Appendix B) shows SO_2 violations only in two areas. Both of these are in the vicinity of plants which will be required to reduce emissions below current practice (Jefferson and McCracken, the two Class I counties). The revised regulations are expected to achieve ambient standards in all parts of the State.

Those counties not listed specifically in Table 4.3 have shown no SO_2 violations for short or long-term standards. Additionally, the absence of either large or concentrated SO_2 emitters makes the absence of either large or concentrated SO_2 emitters makes it apparent that no danger of violations presently exist.

If in time, it becomes apparent that a different level of control is compatible with attainment and maintenance of the ambient standards, the Department will so study the situation and revise its control strategy.

4.1.5 Sulfur Compounds From Processes

Sulfur dioxide emission limitations exist for four other categories of sources. These were not appreciably changed but they are listed below, Table 4.4, for information and reference purposes.

TABLE 4.4

SULFUR COMPOUNDS LIMITATIONS FOR PROCESSES

SOURCE CATEGORY	OLD REGULATION	NEW REGULATION
Sulfate pulp mills	.5 #TRS/ton of pulp or 17.5 ppm, whichever is more restrictive	15.0 ppm TRS daily average plus 40 ppm for 60 min. in 24-hr. period, plus 98% control in non-condensibles
Sulfite pulp mills	9.0 #SO_2/ton of pulp	9.0 #SO_2/ton of pulp
Sulfuric acid plant	27 #SO_2/ton of 98% acid or 27.55 #SO_2/ton of 100% acid, plus .9 # acid mist/ton of 98% acid	27.6 #SO_2/ton of 100% acid, plus .9 # acid mist/ton of 100% acid
Process gases	in Priority I AQCRs 10 grams H_2S/100 ft^3, plus 2000 ppm SO_2, in stack gases	in Priority I AQCRs 10 grams H_2S/100 ft^3, plus 2000 ppm SO_2, in stack gases

In as much as no changes occurred, the example region concept is still adequate to indicate no ambient violations from these sources. Problems from these sources could occur through two circumstances. Proximity to other major sources could cause violations, but no monitoring or multiple sources modeling indicates this. These sources could cause violations through growth, but it is assumed that NSPA, State permitting procedures, and AQMA regulations should prevent this. Therefore, the in-depth analysis used for source types with relaxed emission limitations [illegible] not performed for these sources.

4.2 PARTICULATE MATTER

No revision was made to the regulations covering the emission of particulate matter except for process weight table for new sources which was made slightly more stringent. Therefore, the control strategy presented in the original SIP is still applicable in attaining the National Standards for Particulate Matter. Consequently the following sections were extracted and copied from the original plan.

4.2.1 Procedure

Air Quality Display Model was used for the Louisville Interstate Air Quality Control Region for testing and control strategy for Priority I regions.

4.2.1.1 Model Verification

The use of measured ambient pollution data is an essential step in the simulation process. The model verification, calibration, or validation compares model estimates of pollutant concentration with actual measured values. Several potential errors in the atmospheric transport and diffusion calculations may be examined and systematically accounted for by this procedure. The pollutant emission inventory can be examined for consistency with air quality measurements and topographic conditions peculiar to the air quality region may be evaluated.

The correlation curve resulting from the model run is shown in Figure 4.1. Two lines are shown on the correlation plot.

On the particulate matter plot, along with the least squares line, is a line which is force-fitted through $y = 35$. This force-fit line is considered reasonable since the concentration of 35 ug/m^3 is being used as the background concentration throughout the eastern United States. On this plot two points were omitted as follows: Point No. 15 was affected to an excessive degree by the Indiana Army Arsenal and Point No. 14, located in Jeffersonville, Indiana, and having a value of 202 ug/m^3, was considered too high for that area since the larger particulate emitters are in Kentucky. It appears that, even taking into consideration the prevailing south-westerly wind, the highest reading should be in Kentucky. The 202 ug/m^3 value is not consistent with particulate source locations.

The force-fit correlation curves were used as input for the strategy runs.

4.2.1.2 Null Condition

Isopleths showing the air quality conditions existing in 1970 are shown in Figure 4.2 for particulates. The null run revealed two hot spots in the region for particulate matter. The hot spots (174 ug/m^3 and 166 ug/m^3) show a large influence from American Standard Company and area sources.

4.2.2 Control Strategies Applied

Particulate control strategy using Kentucky's and Indiana's regulations was applied for particulate matter. Kentucky's regulations are contained in Chapter 7 of this plan.

The standards applied in this strategy are shown in Table 4.5. Area source fuel burning emissions were calculated using a factor of 117 pounds emission per ton of coal burned. The regulation allows only about 14 pounds per ton. Therefore, an 85% reduction was assumed for area sources.

An isopleth map showing the air quality resulting from applying Kentucky's and Indiana's regulations is shown in Figure 4.3

The hot spot, 69 ug/m^3 arithmetic mean, may be neglected due to the close proximity of the receptor to the Louisville Refinery. Consequently, the annual geometric mean of 60 ug/m^3 for particulate is achieved in all areas of the region which should assure the attainment of 150 ug/m^3 twenty-four hour secondary standard.

4.3 AIR QUALITY DATA

Updated air quality data for 1972 through 1974 for sulfur dioxide and data for 1970 for particulate matter in the nine air quality control regions are submitted in Appendix B.

4.4 EMISSIONS INVENTORY

Tables representing the 1970 emission inventory data with respect to particulates and an updated 1972 and 1973 emissions data for sulfur oxides are presented in Appendix A to this Plan. A dash mark (-) in the emission inventory tables represents negligible emissions of less than 0.5 tons per year as opposed to zero (0) in which case no emissions were calculated.

TABLE 4.5

LOUISVILLE INTERSTATE AIR QUALITY CONTROL REGION
PARTICULATE MATTER CONTROL REGULATIONS

A. Kentucky

1. Fuel Combustion

The following table applied to the control of particulate matter from the combustion of fuels:

Total Heat Input (10^6 BTU/Hr)	Maximum Wt. Discharge (Lb/10^6 BTU)
10 or less	.56
10,000 or more	.11

For heat inputs between these values, use log-log interpolation.

2. Industrial Process

The following table applies to the control of particulate matter from industrial processes:

Process Weight Rate (Lb/Hr)	Maximum Wt. Discharge (Lb/Hr)
100	.551
60,000	40.0
6,000,000	92.7

For process weight rates between these values, use log-log interpolation.

3. Solid Waste

The allowable emission rate is 0.2 grains per SCF for incinerators. Emission from open burning is zero.

Table 4.5 (continued)

B. Indiana

1. Fuel Combustion

   The allowable emission rate is 0.8 lb/10^6 BTU heat input.

2. Industrial Process

   Same as Kentucky.

3. Solid Waste

   The allowable emission if 0.4 lb/1000 lb per hour of refuse.

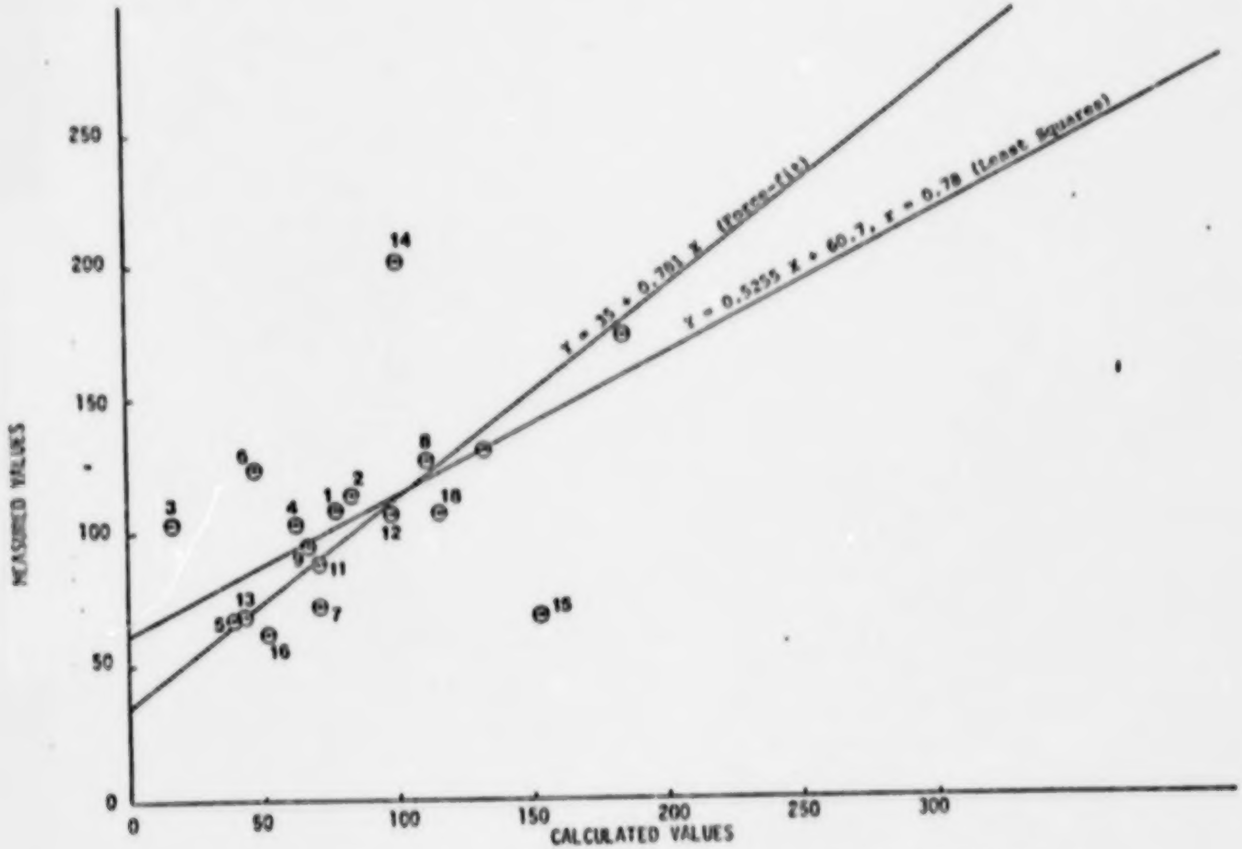
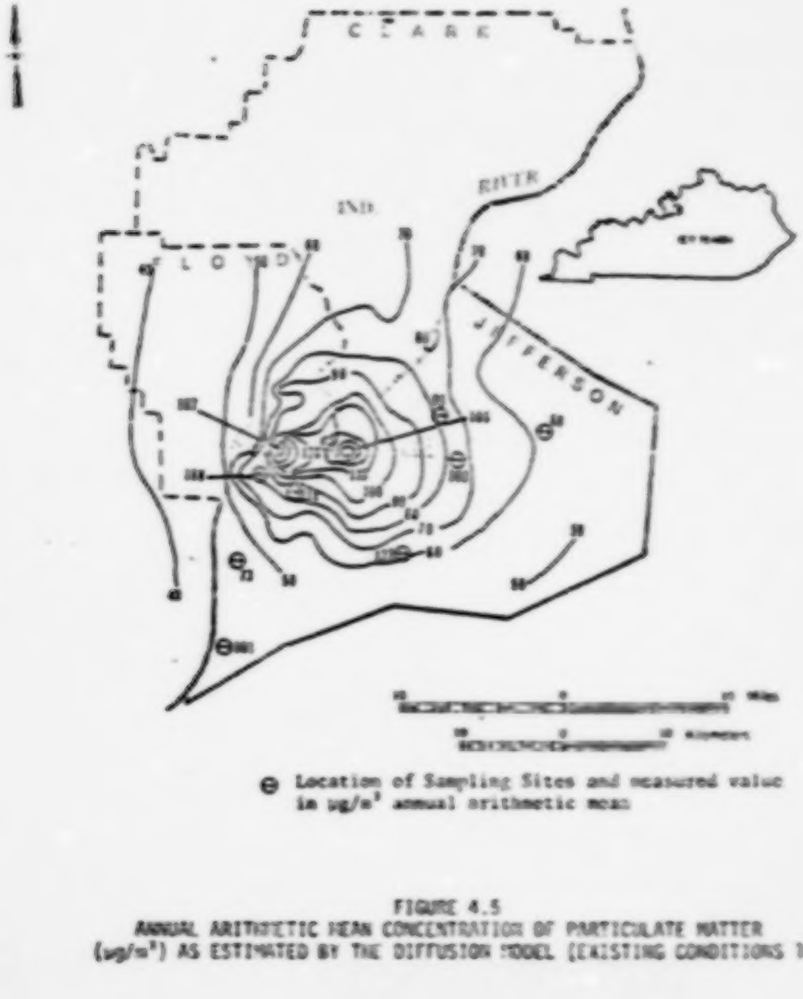


FIGURE 4.4 PARTICULATE MATTER CORRELATION CURVES FROM MODELING CALIBRATION RUN

LOUISVILLE INTERSTATE
Air Quality Control Region



⊖ Location of Sampling Sites and measured value in $\mu g/m^3$ annual arithmetic mean

FIGURE 4.5
ANNUAL ARITHMETIC MEAN CONCENTRATION OF PARTICULATE MATTER ($\mu g/m^3$) AS ESTIMATED BY THE DIFFUSION MODEL (EXISTING CONDITIONS 1970)

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LOUISVILLE INTERSTATE
Air Quality Control Region

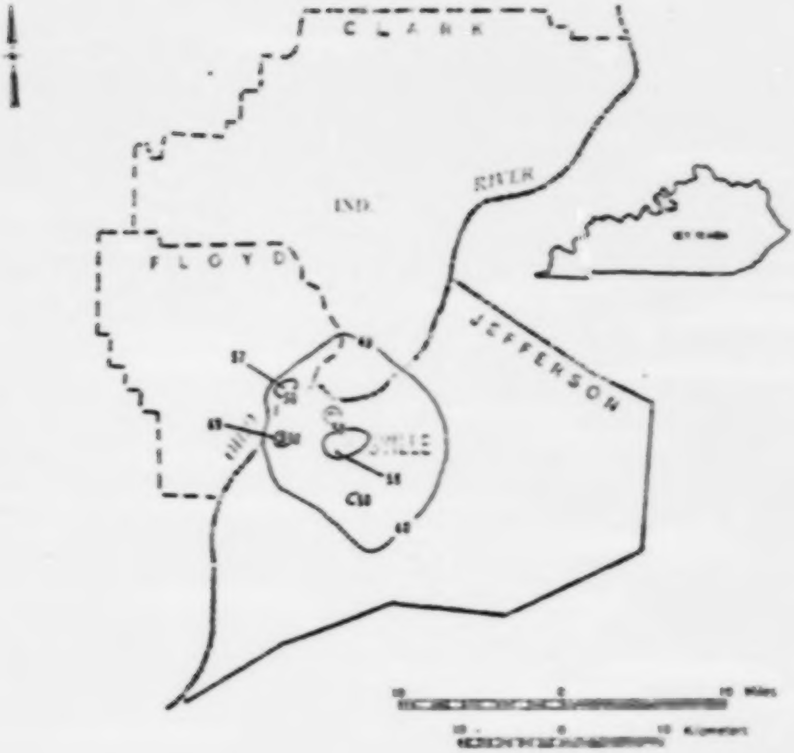


FIGURE 4.6
PREDICTED GROUND LEVEL PARTICULATE MATTER CONCENTRATION
(μg/m³ ANNUAL ARITHMETIC MEAN) FOLLOWING
APPLICATION OF CONTROL STRATEGY (KENTUCKY'S & INDIANA'S REGULATIONS)

V. CONTROL STRATEGY

CARBON MONOXIDE, HYDROCARBONS PHOTOCHEMICAL OXIDANTS, AND NITROGEN DIOXIDE

5.1 CONTROL STRATEGY

The ratio of mobile source emissions to stationary source emissions plays a prime role in control strategy development for carbon monoxide, hydrocarbons, photochemical oxidants, and nitrogen dioxide. Therefore, it was necessary to use two example regions for this set of pollutants and perform strategy calculations because they are priority I regions. The Louisville Interstate and Metropolitan Cincinnati Interstate Regions are priority I for hydrocarbons and photochemical oxidants and are priority III for carbon monoxide and nitrogen dioxide. Even though these regions are classified priority III for carbon monoxide, strategy development was performed since the national and state air quality standards were exceeded.

To be able to make an accurate assessment of needed control, it is of course necessary to have reliable emission inventory data as well as reliable air quality data. Using these parameters in conjunction with the air quality standards, it becomes possible to define the exact nature of the problem. The emission inventory data for the Kentucky portions of both the Louisville and Metropolitan Cincinnati Interstate Regions were compiled by the Kentucky Air Pollution Control Commission staff using 1970 data. Data for other portions of the regions were obtained through a three month study[1], commonly referred to as the "summer study", coordinated by the Environmental Protection Agency which covered the months of July, August, and September 1971. A detailed discussion of both emission inventory data and air quality data are contained in Sections 5.2 and 5.3 respectively.

It was decided, for simplicity, to base the control strategy on a proportional model. A proportional model, unlike a diffusion model, assumes a one for one relationship between emissions and air quality without regard to area or meteorological conditions. Therefore a given decrease in emissions would bring about a corresponding improvement in air quality. This is a necessary simplification for this set of pollutants in that they do not lend themselves as easily to diffusional modeling as do particulates and sulfur oxides; nor is the science of diffusional modeling far advanced for carbon monoxide, hydrocarbons, photochemical oxidants and nitrogen dioxide.

Many factors must be taken into consideration if a proportional model is to reliably reflect existing and projected conditions. One of the prime factors is the ratio of mobile source emissions to stationary source emissions. This is true because of the control program the federal government has been, and is still, pursuing in regard to automotive emissions. The Federal Motor Vehicle Control Program (FMVCP)[2] calls for progressively more stringent emission controls during future model years. Because the emission limitations differ according to model year of the automobile, a situation results where emissions vary as a function of time. To simplify calculations of projected emissions from automobiles, the Environmental Protection Agency has developed relationships in graphical form that predict emission rates from automobiles for future years. These relationships are based on certain assumptions including:

(1) emission control devices just meet existing and proposed standards when new, but deteriorate with use;

(2) that new cars are driven more than older cars;

(3) that the average route speed is 18 miles per hour;

(4) that the age distribution of automobiles follows the national pattern; and

(5) that vehicle miles driven will increase in future years.

In constructing these graphs the year 1967 was assigned a value of one and emissions for future years are given in relation to the 1976 value. The data presented in Table 5.1 were computed from this set of curves with a value of one assigned to the year 1970 and values for other years computed in relation to 1970. This was done since 1970 was measured as the base year for the emission inventory. The values shown in Table 5.1 can be viewed as control factors in that all one must do to obtain automotive emissions for future years is multiply 1970 emissions by the factor for the appropriate year. As used in this chapter, the term "control factor" refers to the fraction remaining after application of emission controls. Therefore a control technique which reduces emissions by 80% would be assigned a control factor of 0.2. No control whatsoever would be assigned a control factor of 1.0.

With stationary sources, it is necessary to consider the source category, estimated growth, and available control techniques. The source categories and their relative contribution of a given pollutant are accurately defined by the emission inventory. All growth factors used in calculating projected emissions were taken from the indices given the June 10, 1970 Economic Projection For Air Quality Control Regions.[3] Growth was computed on a simple rather than compound basis, ie, the percent increase is simply the growth factor times the number of years from the base year of 1970. In general, control techniques and regulations are patterned closely after federal regulations related to Section 110 of the Clean Air Act (as amended), entitled Requirements for Preparation, Adoption, and Submittal of Implementation Plans,[4] Appendix B, and published in the Federal Register, August 14, 1970 (42CFR420). All control strategy calculations, for the Kentucky portions of the interstate regions, were made with the values shown in Tables 5.2 and 5.3. Calculations for the other state were based on data obtained from those states.

TABLE 5.1 AUTOMOTIVE EMISSIONS
WITH THE YEAR 1970 ASSIGNED A VALUE OF ONE

YEAR	CARBON MONOXIDE	NITROGEN OXIDES	HYDROCARBONS
1970	1.0	1.0	1.0
1971	0.96	1.02	0.93
1972	0.93	1.03	0.85
1973	0.87	1.00	0.79
1974	0.83	0.96	0.70
1975	0.74	0.92	0.63
1976	0.64	0.83	0.53
1977	0.54	0.73	0.44
1978	0.46	0.63	0.36
1979	0.39	0.56	0.30
1980	0.32	0.48	0.26

TABLE 5.2. VALUES USED FOR CONTROL STRATEGY CALCULATIONS IN METROPOLITAN CINCINNATI INTERSTATE AIR QUALITY CONTROL REGION

SOURCE CATEGORY	YEARLY GROWTH FACTOR	CONTROL FACTORS*		
		HYDROCARBONS	NITROGEN OXIDES	CARBON MONOXIDES
FUEL COMBUSTION:				
Residential	0.011	1.0	1.0	1.0
Commercial & Institutional	0.048	0.9	0.95	1.0
Industrial	0.038	0.9	0.95	1.0
Storm Electric Power Plant	0.036	0.95	0.95	1.0
PROCESS LOSSES:				
Area	0.038	0.2	1.0	1.0
Chemical	0.045	0.9	1.0	1.0
Food & Agricultural	0.018	1.0	1.0	1.0
Metallurigical	0.017	0.2	1.0	0.1
Mineral	0.033	0.2	1.0	1.0
Petroleum Refining	0.038	1.0	1.0	1.0
Word Processing	0.035	0.2	1.0	1.0
Petroleum Storage	0.047	0.25	1.0	1.0
Miscellaneous	0.038	0.15	1.0	1.0
SOLID WASTE:				
Incineration	0.011	0.8	1.125	0.375
Open Burning	0.011	0.05	0.25	0.06
TRANSPORTATION:				
Diesel Powered Motor Vehicles	0.038	0.85	1.0	1.0
Off Highway Fuel Usage	0.037	1.0	1.0	1.0
Aircraft	0.062	1.0	1.0	1.0
Railroads	0.028	1.0	1.0	1.0
Vessels	0.069	1.0	1.0	1.0
Gasoline Handling Evaporative Losses	0.047	0.7	1.0	1.0
Motor Boats	0.011	1.0	1.0	1.0
MISCELLANEOUS	0.005	1.0	1.0	1.0

* Fraction remaining after applying controls

TABLE 5.3. VALUES USED FOR CONTROL STRATEGY CALCULATIONS IN LOUISVILLE INTERSTATE AIR QUALITY CONTROL REGION

SOURCE CATEGORY	YEARLY GROWTH FACTOR	CONTROL FACTOR* HYDROCARBONS	CONTROL FACTOR* NITROGEN OXIDES	CONTROL FACTOR* CARBON MONOXIDES
FUEL COMBUSTION:				
Residential	0.017	1.0	1.0	1.0
Commercial & Institutional	0.053	0.9	0.95	1.0
Industrial	0.049	0.9	0.95	1.0
Storm Electric Power Plant	0.042	0.95	0.95	1.0
PROCESS LOSSES:				
Area	0.049	1.0	1.0	1.0
Chemical	0.050	0.1	1.0	1.0
Food and Agricultural	0.009	1.0	1.0	1.0
Metallurgical	0.014	1.0	1.0	1.0
Mineral	0.042	1.0	1.0	1.0
Petroleum Refining	0.029	1.0	1.0	0.1
Word Processing	0.030	0.2	1.0	1.0
Petroleum Storage	0.051	0.25	1.0	1.0
Miscellaneous	0.049	0.15	1.0	1.0
SOLID WASTE:				
Incineration	0.017	0.8	1.125	0.075
Open Burning	0.017	0.05	0.25	0.06
TRANSPORTATION:				
Diesel Powered Motor Vehicles	0.038	0.85	1.0	1.0
Off Highway Fuel Usage	0.037	1.0	1.0	1.0
Aircraft	0.062	1.0	1.0	1.0
Railroads	0.029	1.0	1.0	1.0
Vessels	0.063	1.0	1.0	1.0
Gasoline Handling Evaporative Losses	0.051	0.75	1.0	1.0
Motor Boats	0.017	1.0	1.0	1.0
MISCELLANEOUS	0.006	1.0	1.0	1.0

* Fraction remaining after applying controls

The values for both ambient air concentrations and emission values presented in this section are predicated on stationary sources complying with the applicable regulations in Chapter 7 by the given date. Therefore the values presented for years prior to 1975 are only informational since full compliance with all regulations is not anticipated until 1975.

It should also be noted that the emissions projected from automobiles as a result of the Federal Motor Vehicle Control Program are possible only if planned controls of automotive exhausts do indeed produce such reductions. To be able to verify the efficacy of this program and to insure that automobiles are maintained properly for emission control, Kentucky is seeking authority through legislation, to inspect and test exhaust emissions from automobiles on a periodic basis. A study will be performed during the next biennium to define the exact nature of the automotive pollution problem in the state. Additionally data will be gathered which will form the foundation of any regulations that may be necessary to cope with the problem.

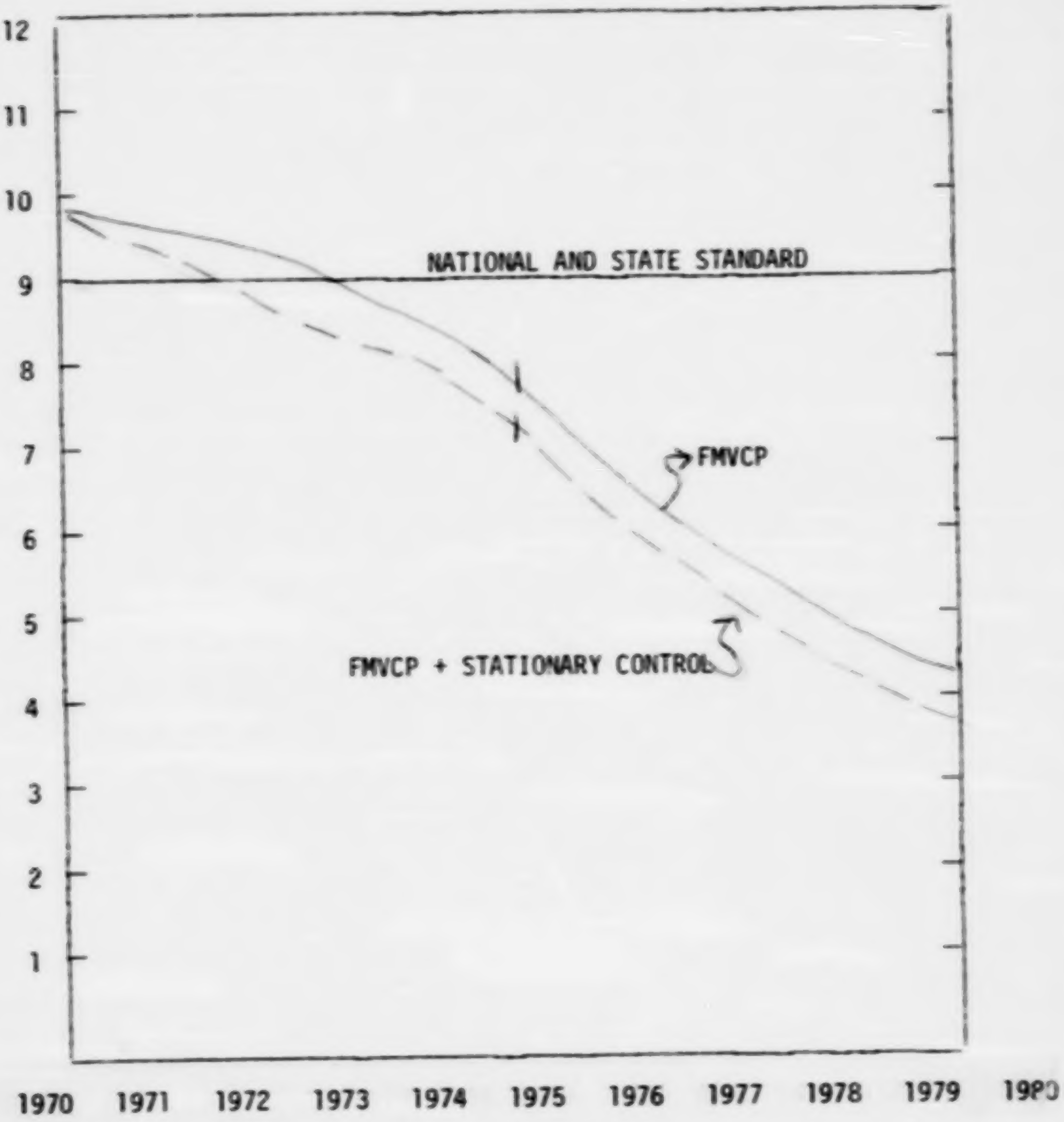
5.1.1 METROPOLITAN CINCINNATI INTERSTATE AIR QUALITY CONTROL REGION (MCIAQCR)

5.1.1.1 Carbon Monoxide

For purposes of carbon monoxide strategy development, the second highest value for either the one-hour or eight-hour concentration (whichever concentration presents the worst condition) is chosen as the value defining the magnitude of the problem. The theory behind this is that since the applicable national and state air quality standard is not to be exceeded more than once per year, the value chosen as a base for control strategy development should not be exceeded more than once per year. Selecting the second highest value fulfills this condition whereas selecting the extreme value would set up a condition inconsistent with the language of the air quality standard, which would require control strategy to prevent an air quality concentration already permissible in the standard.

The maximum measured one-hour concentration of 15 parts per million did not exceed the one-hour national or state air quality standard. Therefore, the second highest eight-hour concentration of 9.9 parts per million was chosen as the base for control strategy development. This indicates that a 9.1 percent decrease in carbon monoxide emissions is necessary to achieve the national air quality standard of 9 parts per million, eight-hour concentration.

Applying the Federal Motor Vehicle Control Program and modifying emissions from stationary sources to reflect anticipated growth, a 21.4 percent decrease in carbon monoxide emissions is projected for 1975. This is sufficient to meet the national and state air quality standard by 1975. A graphic display of projected eight-hour concentrations of carbon monoxide due to the FMVCP is shown by the solid line in Figure 5.1.



CALENDAR YEAR

FIGURE 5.1 PROJECTED CARBON MONOXIDE CONCENTRATION IN THE METROPOLITAN CINCINNATI INTERSTATE AIR QUALITY CONTROL REGION AFTER APPLYING CONTROL TO STATIONARY SOURCES AND/OR THE FEDERAL MOTOR VEHICLE CONTROL PROGRAM (FMVCP)

The regulations adopted for control of carbon monoxide from stationary sources provide additional protection and enhancement of the air quality. These regulations provide for carbon monoxide control from grey iron cupolas, blast furnaces, and basis oxygen furnaces. Combining the direct effects of these regulations with the reductions produced through the control of open burning and improved incineration brings about a total reduction in carbon monoxide emissions of 27.2 percent by 1975. The projected eight-hour concentrations due to the combined effects of stationary source control and the FMVCP is shown by the dashed line in Figure 5.1.

The national and state air quality standards for carbon monoxide will be met by 1975. A summary of values relative to the carbon monoxide control strategy is shown in Tables 5.4 and 5.5. For a more detailed analysis relative to 1975 emissions see Table A3c in Appendix A.

5.1.1.2 Nitrogen Dioxide

Since the "summer study" did not encompass a full year of measurements, it was necessary to estimate the annual average for nitrogen dioxide. This estimate was made using the following empirical relationship:

> Estimated Annual Average, ug/m^3 = 25.2 + 0.76 (July-August-September Average, ug/m^3).

Utilizing this relationship, a value of 83 micrograms per cubic meter (0.043 parts per million) was obtained as the annual average and was consequently selected as the base value for control strategy development.

The national and state air quality standard for nitrogen dioxide is 0.05 parts per million, annual average. Consequently, this standard was met for the base year (1970) and through 1980.

Since the FMVCP will not effect a decrease in nitrogen dioxide emissions from motor vehicles until the 1975 model year, increases of 10.7 percent and 8.0 percent are projected for 1975 and 1977 respectively. (Figure 5.2 shows the projected annual average concentration as a result of the FMVCP).

The application of nitrogen oxides emission limitation to new indirect heat exchangers of 250 MM BTU/Hr or more will assure the maintenance of the standard.

A summary of values relative to the nitrogen dioxide control strategy is shown in Tables 5.4 and 5.5. For a more detailed analysis relative to projected 1975 emissions see Table A3d in Appendix A.

5.1.1.3 Hydrocarbons and Photochemical Oxidants

Photochemical oxidants are not emitted directly but are formed by complex

TABLE 5.4 SUMMARY OF CONTROL STRATEGY ANALYSIS FOR CARBON MONOXIDE, HYDROCARBONS, PHOTOCHEMICAL OXIDANTS AND NITROGEN DIOXIDE METROPOLITAN CINCINNATI INTERSTATE AIR QUALITY CONTROL REGION

NATIONAL AIR QUALITY STANDARD, PPM	CONCENTRATION IN PPM FOR STRATEGY DEVELOPMENT	EXISTING EMISSIONS TONS/YEAR	EMISSIONS REQUIRED ACHIEVE STANDARDS TONS/YEAR	EMISSIONS AFTER APPLICATION OF FEDERAL MOTOR VEHICLE PROGRAM		EMISSIONS AFTER APPLICATION OF STATIONARY CONTROLS AND FMVCP[e]	
				1975	1977	1975	1977
CO 9.0[a]	9.9	995,680	905,073	782,495	613,072	725,050	553,190
Oxidants 0.08[b]	0.12	214,474[d]	145,842[d]	170,657	146,902	134,371	108,666
NO_x 0.05[c]	0.042	214,300	120,441	237,257	231,408	227,932	220,827

a - 8 hour concentration

b - 1 hour concentration

c - Annual Average

d - Hydrocarbons

e - FMVCP - Federal Motor Vehicle Control Program

TABLE 5.5 PROJECTED AIR QUALITY CONCENTRATION AND EMISSION VALUES FOR THE METROPOLITAN CINCINNATI INTERSTATE AIR QUALITY CONTROL REGION WITH APPLICATION OF FEDERAL MOTOR VEHICLE CONTROL PROGRAM AND STATIONARY SOURCE CONTROL

	CARBON MONOXIDE		NITROGEN OXIDES		PHOTOCHEMICAL OXIDANTS/HYDROCARBONS	
YEAR	PROJECTED EMISSIONS TONS/YEAR	PROJECTED 8-HOUR CONCENTRATION, PPM	PROJECTED EMISSIONS TONS/YEAR	PROJECTED ANNUAL AVERAGE CONCENTRATION, PPM	PROJECTED EMISSIONS[a] TONS/YEAR	PROJECTED 1 HOUR[b] CONCENTRATION, PPM
1970	995,680	9.9	214,308	0.042	214,474	0.12
1972	886,421	8.8	221,943	0.044	163,228	0.091
1973	835,553	8.3	224,574	0.044	153,626	0.087
1974	802,215	8.0	226,253	0.044	143,515	0.080
1975	725,050	7.2	227,932	0.044	134,371	0.075
1976	639,120	6.4	224,055	0.042	120,777	0.068
1977	553,190	5.5	220,827	0.040	108,666	0.061
1978	484,790	4.8	216,799	0.039	98,038	0.055
1979	423,157	4.2	215,625	0.038	90,377	0.51
1980	365,523	3.6	213,499	0.037	85,681	0.048

a. Measured as hydrocarbon emissions

b. Measured as ambient concentration of photochemical oxidants

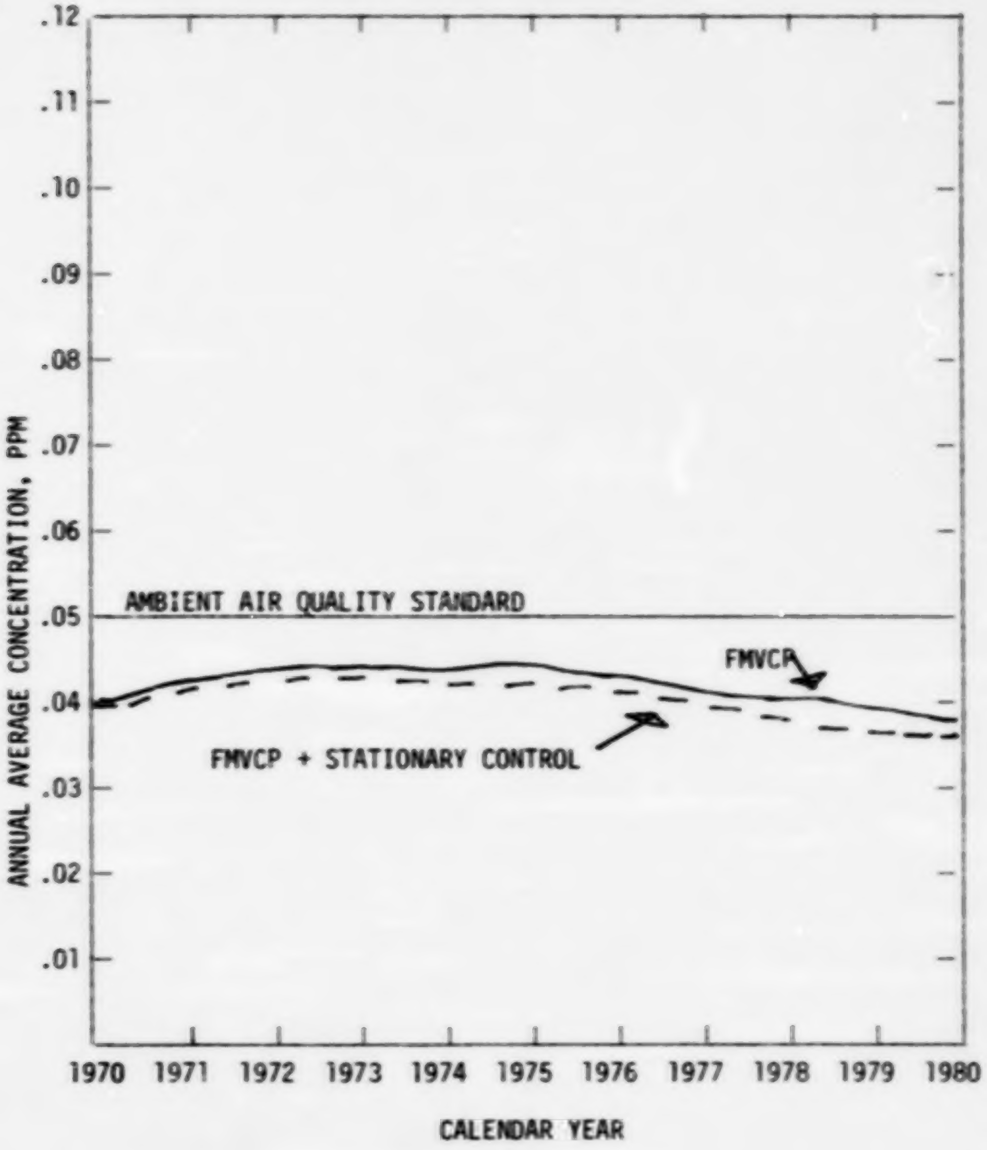


FIGURE 5.2 PROJECTED NITROGEN OXIDES CONCENTRATION IN THE METROPOLITAN CINCINNATI INTERSTATE AIR QUALITY CONTROL REGION AFTER APPLYING CONTROL TO STATIONARY SOURCES AND/OR THE FEDERAL MOTOR VEHICLE CONTROL PROGRAM (FMVCP)

interactions when various pollutants, primarily hydrocarbons and nitrogen oxides, are exposed to sunlight. It has been established that photochemical oxidant levels vary as a function of the hydrocarbon level. Therefore, the ambient air quality value for photochemical oxidants is selected as a base for control strategy development with hydrocarbons being the pollutant controlled.

The second highest one-hour concentration is chosen as the value for air quality projections and control strategy development. The reasoning is that since the applicable national and state air quality standard is not to be exceeded more than once per year, the value chosen as a base for control strategy development should not be exceeded more than once per year. Therefore selecting the second highest value, presents a situation consistent with the language of the air quality standard in which the standard may be exceeded once per year.

Proceeding on this premise a base value of 0.12 parts per million, one hour concentration, was selected from the summer study for control strategy development.

The relationship between photochemical, oxidant concentrations and the required reduction in hydrocarbon emissions to achieve the national air quality standard is described in Figure 1, Appendix J of the Requirements for Preparation, Adoption, and Submittal of Implementation Plans[4]. Entering this curve with the value of 0.12 parts per million, a reduction of 32 percent in hydrocarbon emissions is indicated.

Applying the FMVCP emission controls to automotive sources and modifying stationary sources by anticipated growth, reductions in hydrocarbon emissions of 20.4 percent and 31.5 percent are projected for 1975 and 1977 respectively. The projected one-hour concentrations as a result of the FMVCP is shown by the solid line in Figure 5.3. As one can be seen from this curve, the air quality standard will not be met until 1978 as a result of automotive control alone.

To calculate the further reduction achieved through application of controls to stationary sources, the hydrocarbon regulations contained in Chapter 7 were applied to the appropriate sources. In addition to these specific regulations, the reductions due to open burning control and improved incineration practices were considered. Also it was assumed that commercial and industrial fuel burning sources could achieve a 10 percent reduction in hydrocarbon emissions and power plants were assumed to bring about a 5 percent reduction. These reductions reflect the combined effects of improved equipment design, improved operating practices in conjunction with some fuel substitution. The application of these stationary source controls in combination with the FMVCP emission controls will achieve the national and state air quality standard by 1975. A plot of the projected one-hour concentration as a result of these regulations and the FMVCP emission controls is shown by the dashed line in Figure 5.3. As can be seen from this curve, the maximum one-hour concentration level in 1975 is projected to be 0.075 parts per million. Also there is

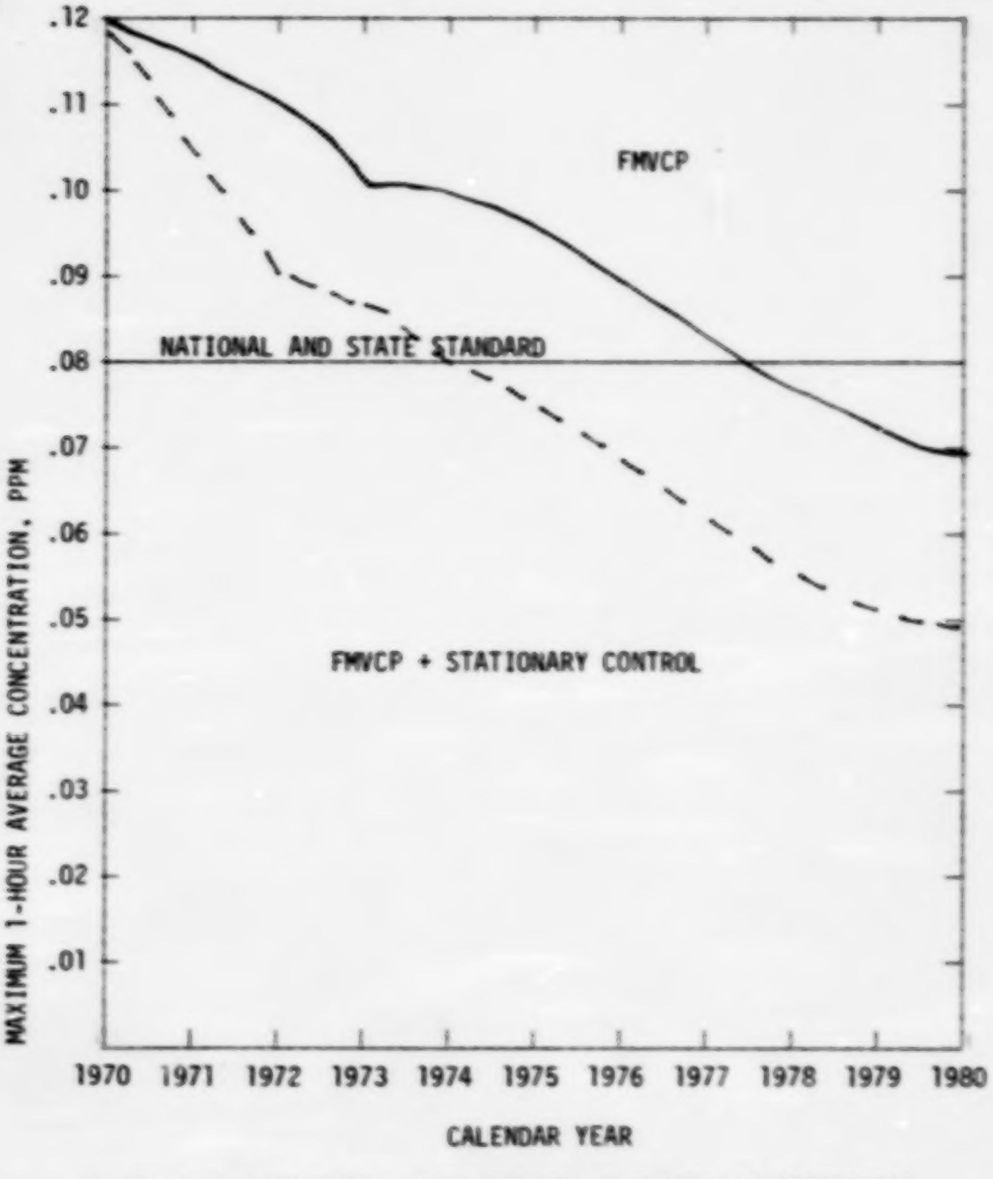


FIGURE 5.3 PROJECTED PHOTOCHEMICAL OXIDANTS CONCENTRATION IN THE METROPOLITAN CINCINNATI INTERSTATE AIR QUALITY CONTROL REGION AFTER APPLYING CONTROL TO STATIONARY SOURCES AND/OR THE FEDERAL MOTOR VEHICLE CONTROL PROGRAM (FMVCP)

continued enhancement of the air quality through the year 1980.

A summary of the control strategy is shown in Tables 5.4 and 5.5. A more detailed breakdown of projected emissions from various sources is shown in Table A3e of Appendix A.

5.1.2 LOUISVILLE INTERSTATE AIR QUALITY CONTROL REGION (LIAQCR)

5.1.2.1 Carbon Monoxide

The maximum measured one-hour concentration of 17 parts per million did not exceed the one-hour national or state air quality standard. Therefore, the control strategy is based on the second highest eight-hour concentration using the same rationale outlined in Section 5.1.1.1. This value of 10.5 parts per million exceeds the related national and state air quality standard of 9 parts per million. A reduction of 13.3 percent is needed to achieve the national and state standard.

A reduction of 18.5 percent can be achieved by 1975 through application of the FMVCP emission control. This is adequate to meet the national air quality standard and will provide air quality enhancement through the year 1980. A graphic display of this projected air quality is shown by the solid line in Figure 5.4.

The regulations adopted for control of carbon monoxide from stationary sources provide additional enhancement and protection of the air quality. Considering these regulations, which provide for carbon monoxide control from grey iron cupolas and waste gas streams from petroleum processes, in conjunction with the FMVCP, an eight-hour concentration of 7.3 parts per million is projected for 1975. The dashed line in Figure 5.4 is a plot of air quality versus time through the year 1980.

A summary of the control analysis is shown in Tables 5.6 and 5.7. For a more detailed view of projected emissions from various sources categories see Table A6c of Appendix A.

5.1.2.2 Nitrogen Dioxide

Utilizing the method outlined in Section 5.1.1.2, the estimated annual average for nitrogen dioxide is 0.040 parts per million. Therefore, the national and state air quality standard of 0.05 parts per million, annual average is met for the base year.

Application of the FMCVP emission controls will bring about increases of 13.0 percent and 13.1 percent by 1975 and 1977 respectively. As can be seen from the solid line in Figure 5.5, the national or state air quality standard will continue to be met through the year 1980.

The application of Nitrogen oxides emission limitation to new indirect heat exchangers of 250 MM BTU/Hr or more will assure the maintenance of the standard.

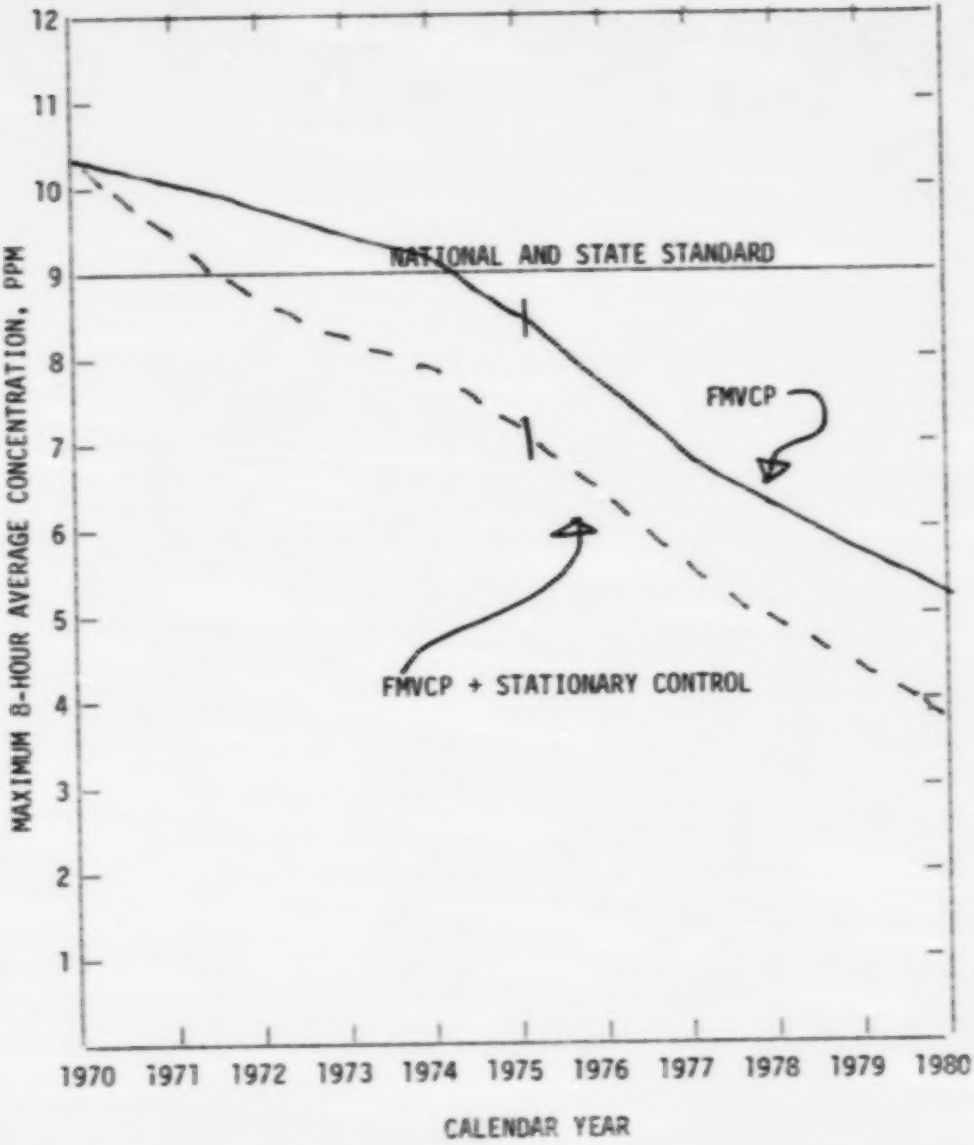


FIGURE 5.4 PROJECTED CARBON MONOXIDE CONCENTRATION IN THE LOUISVILLE INTERSTATE AIR QUALITY CONTROL REGION AFTER APPLYING CONTROL TO STATIONARY SOURCES AND/OR THE FEDERAL MOTOR VEHICLE CONTROL PROGRAM (FMVCP)

TABLE 5.6 SUMMARY OF CONTROL STRATEGY ANALYSIS FOR CARBON MONOXIDE, HYDROCARBONS, PHOTOCHEMICAL OXIDANTS, AND NITROGEN DIOXIDE LOUISVILLE INTERSTATE AIR QUALITY CONTROL REGION

NATIONAL AIR QUALITY STANDARD, PPM		CONCENTRATION IN PPM FOR STRATEGY DEVELOPMENT	EXISTING EMISSIONS TONS/YEAR	EMISSIONS REQUIRED ACHIEVE STANDARDS TONS/YEAR	EMISSIONS AFTER APPLICATION OF FEDERAL MOTOR VEHICLE PROGRAM		EMISSIONS AFTER APPLICATION OF STATIONARY CONTROLS AND FMVCP[e]	
					1975	1977	1975	1977
CO	9.0[a]	10.5	344,560	298,734	280,813	227,078	239,647	184,512
Oxidants	0.08[b]	0.140	87,253[d]	48,862	78,071	72,348	47,398	39,369
NO_x	0.05[c]	.040	99,629	57,884	112,596	112,676	107,034	106,695

a - 8 hour concentration

b - 1 hour concentration

c - Annual Average

d - Hydrocarbons

e - FMVCP - Federal Motor Vehicle Control Program

TABLE 5.7 PROJECTED AIR QUALITY CONCENTRATIONS AND EMISSION VALUES FOR THE LOUISVILLE INTERSTATE AIR QUALITY CONTROL REGION WITH APPLICATION OF FEDERAL MOTOR VEHICLE CONTROL PROGRAM AND STATIONARY SOURCE CONTROL

	CARBON MONOXIDE		NITROGEN OXIDES		PHOTOCHEMICAL OXIDANTS/HYDROCARBONS	
YEAR	PROJECTED EMISSIONS TONS/YEAR	PROJECTED 8-HOUR CONCENTRATION, PPM	PROJECTED EMISSIONS TONS/YEAR	PROJECTED ANNUAL AVERAGE CONCENTRATION, PPM	PROJECTED EMISSIONS[a] TONS/YEAR	PROJECTED 1-HOUR[b] CONCENTRATION, PPM
1970	344,619	10.5	99,629	0.040	87,253	0.140
1972	290,939	8.9	101,887	0.043	56,268	0.090
1973	274,793	8.4	103,818	0.044	53,962	0.087
1974	264,359	8.1	105,426	0.044	50,192	0.081
1975	239,647	7.3	107,034	0.044	47,398	0.076
1976	212,080	6.5	107,026	0.045	43,139	0.069
1977	184,512	5.6	106,695	0.045	39,369	0.063
1978	162,656	5.0	106,364	0.045	36,087	0.058
1979	143,655	4.4	107,002	0.045	33,781	0.054
1980	124,654	3.8	107,317	0.045	32,452	0.052

a. Measured as hydrocarbon emissions

b. Measured as ambient concentration of photochemical oxidants

5.1.2.3 Hydrocarbons and Photochemical Oxidants

Using the rationale outlined in Section 5.1.1.3, a base value for photochemical oxidants of 0.14 parts per million, one-hour concentration, was selected from the summer study for control strategy development. This indicates that a reduction of 44 percent in hydrocarbon emissions is necessary to achieve the national and state air quality standard of 0.08 parts per million for photochemical oxidants.

Applying the FMVCP emission controls to automotive sources and modifying stationary sources by anticipated growth, reductions in hydrocarbon emissions of 10.5 percent and 17.1 percent are projected for 1975 and 1977 respectively. This clearly will not be sufficient to meet the air quality standard and it will be necessary to apply stationary source control. The solid line in Figure 5.6 is a plot of the projected one-hour concentrations of photochemical oxidants due to application of the FMVCP emission controls through the year 1980. As can be seen from this plot, the air quality standard would not be met through the year 1980 with application of FMVCP alone.

To calculate the further reduction achieved through application of controls to stationary sources, the hydrocarbon regulations contained in Chapter 7 were applied to the appropriate sources. In addition to these specific regulations, the reductions due to open burning control and improved incineration practices were considered. Also it was assumed that commercial and industrial fuel burning sources could achieve a 10 percent reduction in hydrocarbon emissions and power plants were assumed to bring about a 5 percent reduction. These reductions reflect the combined effects of improved equipment design and improved operating practices in conjunction with some fuel substitution. The application of these stationary source controls in combination with the FMVCP will achieve the national and state air quality standard for photochemical oxidants by 1975. A plot of the projected air quality as a result of these regulations and the FMVCP is shown by the dashed line in Figure 5.6. As can be seen from this curve, the air quality in 1975 is projected to be 0.076 parts per million. Also there is continued enhancement of the air quality through the year 1980.

A summary of the control strategy analysis is shown in Tables 5.6 and 5.7. A more detailed breakdown of projected emissions from various sources is shown in Table A6e Appendix A.

5.2 EXISTING EMISSION INVENTORY

Tables showing 1970 emission inventory data with respect to carbon monoxide, hydrocarbons and nitrogen oxides are in Appendix A to this Plan.

A dash mark (-) in the emission inventory tables represents negligible emissions of less than 0.5 tons per year, as opposed to zero (0) in which case no emissions were calculated.

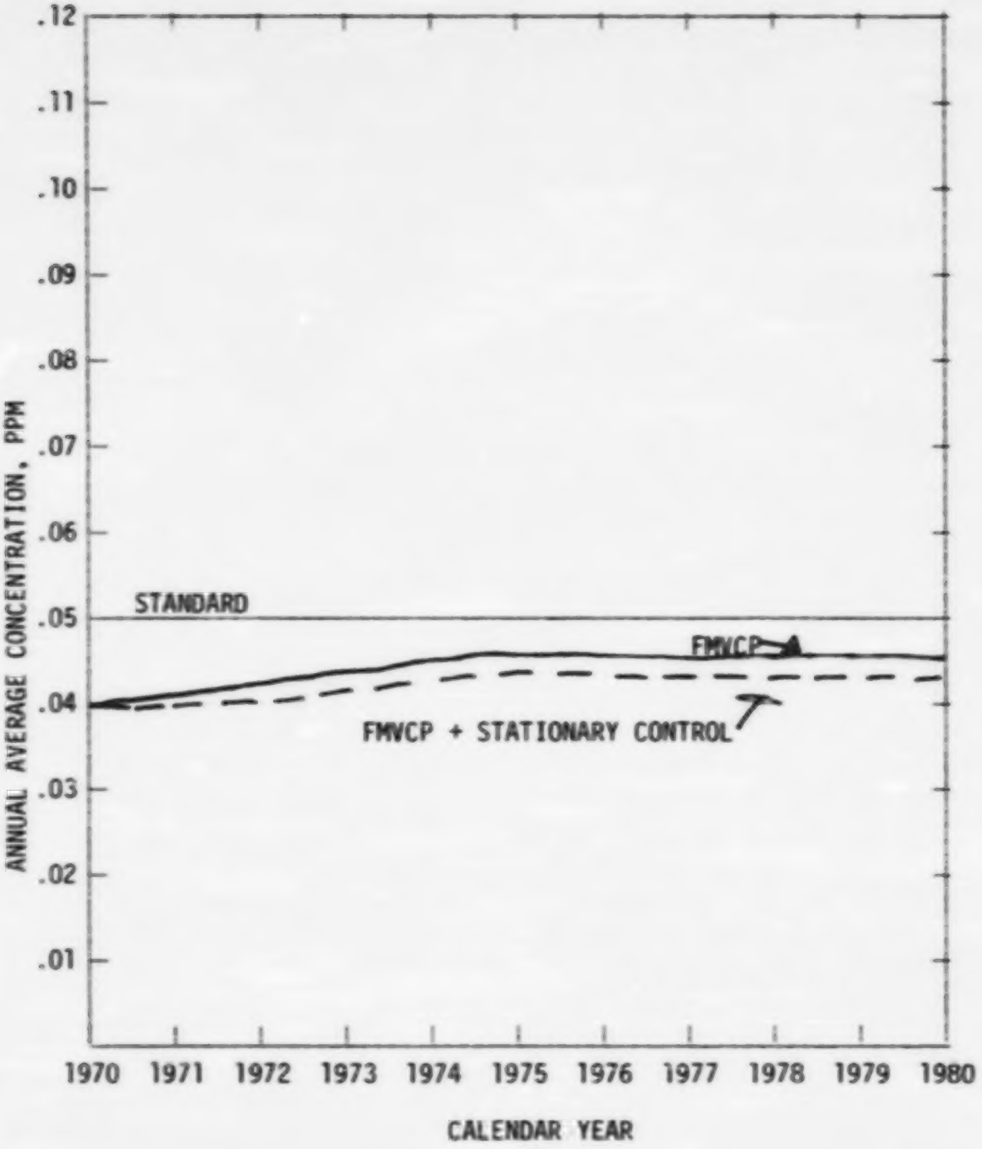


FIGURE 5.5 PROJECTED NITROGEN OXIDES CONCENTRATION IN THE LOUISVILLE INTERSTATE AIR QUALITY CONTROL REGION AFTER APPLYING CONTROL TO STATIONARY SOURCES AND/OR THE FEDERAL MOTOR VEHICLE CONTROL PROGRAM (FMVCP)

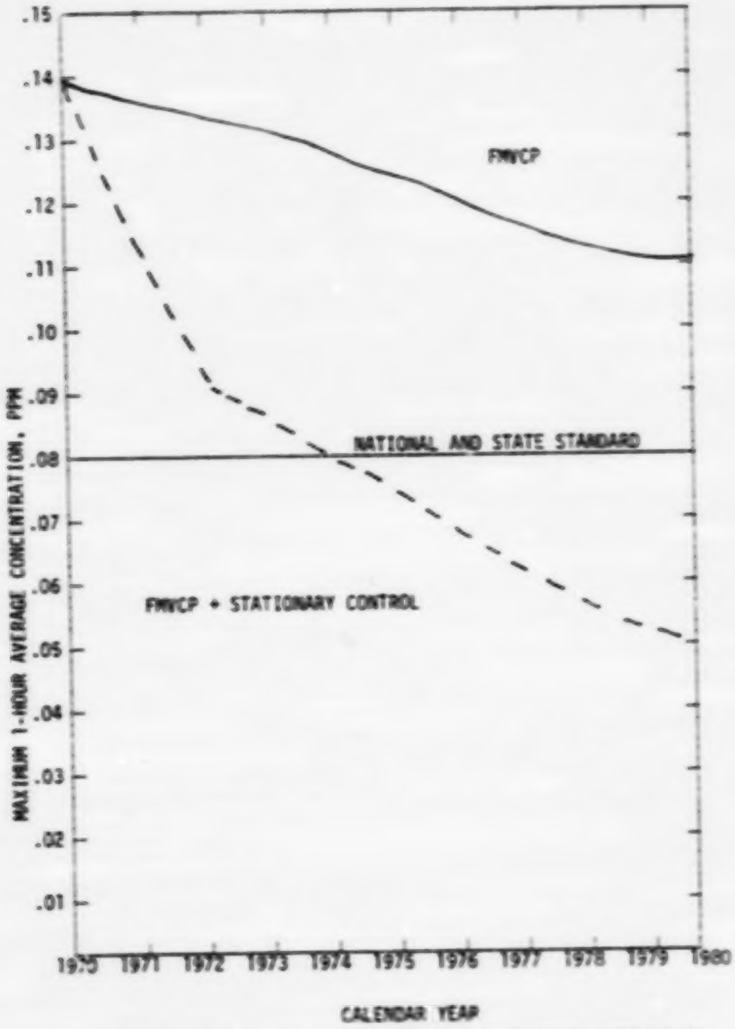


FIGURE 5.6 PROJECTED PHOTOCHEMICAL OXIDANTS CONCENTRATION IN THE LOUISVILLE INTERSTATE AIR QUALITY CONTROL REGION AFTER APPLYING CONTROL TO STATIONARY SOURCES AND/OR THE FEDERAL MOTOR VEHICLE CONTROL PROGRAM (FMVCP)

Figures 5.7 through 5.9 of this section show the percentage contributions of the five source categories to the regional pollution picture by pollutant. Some contributions are zero or negligible and do not show up on the charts, but are pointed out in the figures by notation. The five categories are as follows: Fuel combustion - stationary sources, process losses, solid waste disposal, transportation and miscellaneous area sources.

The discussion to follow will deal primarily with extremes of high or low contributions. Some categories falling in between may be deleted from discussion. The reader is referred to the pie charts for the relative contribution of any category not specifically mentioned in the text.

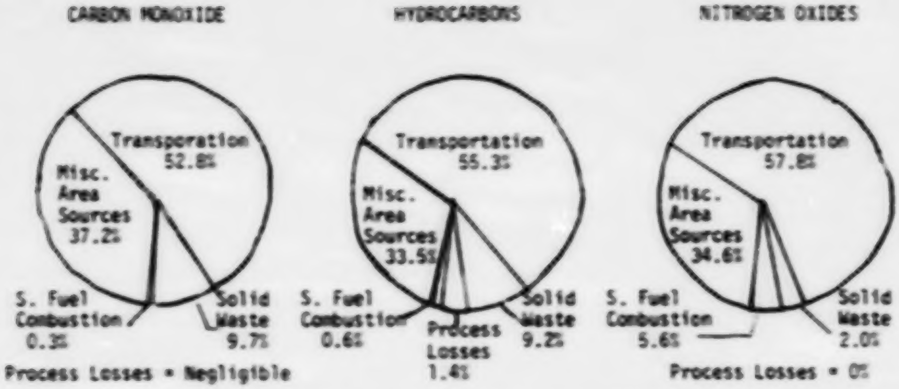
5.2.1 Appalachian Air Quality Control Region

Transportation and miscellaneous area sources (primarily burning coal refuse disposal areas) are the two largest contributors to the total emissions of carbon monoxide (CO), hydrocarbons (HC) and nitrogen oxides (NO_x) in the Appalachian Region (See Figure 5.7).

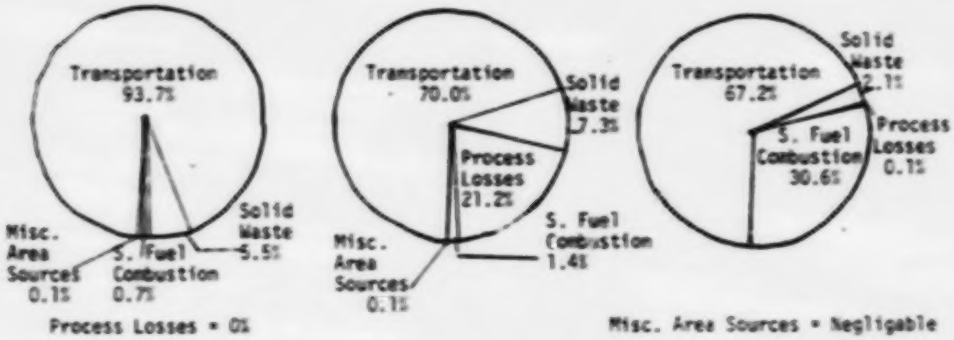
Carbon monoxide (CO) emissions in the region (296,098 tons for 1970) accounted for 19.2% of the state's total CO emissions. This makes the Appalachian Region the one with the largest total CO emissions in relation to the state's other eight regions. Stationary fuel combustion and process sources are practically insignificant contributors of CO in the region with emissions from process sources being negligible and stationary fuel combustion sources adding only 0.3% of the total regional CO emissions.

Hydrocarbons (HC) emissions (57,003 tons) in the Appalachian Region during 1970 accounted for 13.7% of the state's total hydrocarbon emissions, second only to the Louisville Region in percentage contribution to state HC total. As regards relative source category contribution to regional total HC emissions, solid waste disposal (mainly point source burning) ranked third, following transportation and miscellaneous area sources. Solid waste disposal accounts for 9.2% of the regional total. Stationary fuel combustion and process losses are minor contributors to the overall regional hydrocarbon total as seen in Figure 5.7.

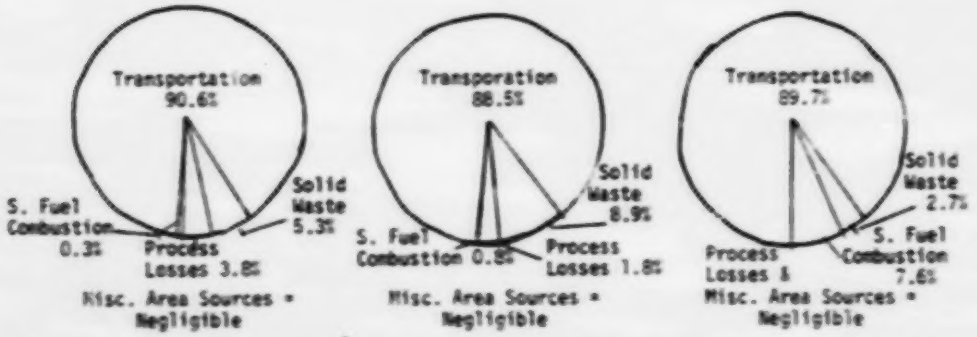
Nitrogen oxides (NO_x) emissions in the Appalachian Region which amounted to 50,587 tons in 1970 represented 8.8% of the state's total NO_x emissions. This placed it third in ranking relative to regional contributions to state total NO_x. Figure 5.7 shows transportation and miscellaneous area sources as the two larger NO_x emitting categories and stationary fuel combustion as the third ranking category. Area source stationary fuel combustion (SFC) emissions predominated the SFC total. There was no NO_x emissions from process losses reflected in the 1970 emission inventory for the Appalachian Region.



APPALACHIAN AIR QUALITY CONTROL REGION



BLUEGRASS AIR QUALITY CONTROL REGION



METROPOLITAN CINCINNATI INTERSTATE AIR QUALITY CONTROL REGION (Kentucky Portion Only)

Figure 5.7 Relative Contributions of Regional Total Source Category Emissions to Regional Pollutant Totals

5.2.2 Bluegrass Air Quality Control Region

Transportation was the largest contributing category to the emissions of all three pollutants: Carbon Monoxide (93.7%), Hydrocarbons (70.0%), and Nitrogen Oxides (67.2%) in the Bluegrass region during 1970. (See Figure 5.7).

Carbon monoxide (CO) emissions, 200,430 tons for 1970 in the Bluegrass Region, were 13.0% of the state's total CO emissions. This makes this region the third ranking CO emitting region in the state. Solid waste disposal was the second largest contributing category to the Bluegrass region's CO emissions. Process losses of CO were zero for the region in 1970 and miscellaneous area source emissions were very minor, only 0.1% of the regional CO total.

Hydrocarbons (HC) emissions in the Bluegrass region for 1970 (53,837 tons) were 13.0% of Kentucky's total HC emissions. Second to transportation as a category contributing to the regional total HC emissions was process losses with 14,434 tons or 21.2% of the regional total. These losses resulted mainly from the food and agricultural industries. Particularly, fermentation processes (distilleries, whiskey storage) were the largest contributors in this category. Miscellaneous area source emissions were only 0.1% of the regional total HC emissions.

Nitrogen oxides (NO_x) emissions, 46,940 tons for 1970 in the Bluegrass Region, represented 8.1% of the state's total NO_x emissions. The second largest contributing category (following transportation) to the regional total NO_x emissions is stationary fuel combustion (SFC). In this region point source NO_x emissions from stationary fuel combustion sources predominated, making up 77.5% of the region's total NO_x emissions from SFC sources. This is attributable to the power plants and numerous distilleries operating during 1970 in the region. Miscellaneous area source emissions of NO_x for the region were negligible for 1970 and process losses accounted for only 0.1% of the regional NO_x total.

5.2.3 Metropolitan Cincinnati Interstate Air Quality Control Region (Kentucky Portion)

In the Cincinnati region transportation was the largest emitter of all three pollutants: Carbon Monoxide (90.6%), Hydrocarbons (88.5%) and Nitrogen Oxides (89.7%). Percentages are of the regional total of each pollutant (See Figure 5.7).

Carbon Monoxide (CO) emissions for the region in 1970 were 127,346 tons or 8.3% of the state's total CO emissions. Second to transportation in rank toward the 127,000 + tons was solid waste disposal with 6,697 tons or 5.3% of the regional total CO emissions. Process losses were third with its 3.8% coming solely from metallurgical industries. Miscellaneous area source CO emissions were negligible in 1970 and stationary fuel combustion accounted for only 0.3% of the regional total CO.

Hydrocarbons (HC) emissions in the Cincinnati Region amounted to 27,628 tons in 1970 or 6.7% of the Kentucky total HC emissions. Solid waste disposal ranked second to transportation in percent contribution to regional total HC, emitting 8.9% of the total. Miscellaneous area source HC emissions were negligible and stationary fuel combustion sources emitted a relatively minor amount of HC, only 0.8% of the regional total. (See Figure 5.7).

Nitrogen Oxides (NO_x) emissions in the Cincinnati Region were 21,101 tons or only 3.6% of the total state's NO_x emissions. This means that this region accounted for less of Kentucky's total NO_x than any other region in the state. Second to transportation in categorical contribution to regional total NO_x was stationary fuel combustion with 7.6% (See Figure 5.7). The percentage contribution of the emissions of NO_x from process losses and miscellaneous area sources to the regional total NO_x were negligible.

5.2.4 Evansville-Owensboro-Henderson Interstate Air Quality Control Region (Kentucky Portion) (Referred to herein as the Evansville-Henderson Region)

Carbon Monoxide (CO) emissions for the Evansville-Henderson region were 83,311 tons in 1970. This was 5.4% of Kentucky's total CO emissions. Consequently, this region has the least total CO emissions of any region in the state. Transportation tops the list of contributors to the regional total CO emissions with 84.4%. Solid waste disposal ranks second to transportation in relative contribution to the regional CO total. Process losses and miscellaneous area sources rank third and fourth respectively. The process loss contribution was due primarily to a single wood processing plant (papermill) while the miscellaneous area source contribution resulted mainly from burning coal refuse.

Hydrocarbons (HC) emissions in the region for 1970 were 22,113 tons or 5.3% of the state's total HC emissions. As with CO, the region ranks lowest also in hydrocarbon emissions of any other region in the state. Transportation ranks first in the region with 65.6% of the region's HC emissions. Second to transportation in relative contribution to the region's total HC emissions were process losses with 21.5%. This came mainly from the food and agricultural industries, the largest sources being distilleries. Solid waste disposal ranked third in the region as a source of hydrocarbon emissions with 1,745 tons (7.9%). (See Figure 5.8).

Nitrogen Oxides (NO_x) emissions for 1970 in the Evansville-Henderson Region amounted to 40,859 tons or 7.1% of the state's total NO_x emissions. For this region transportation took a second place to stationary fuel combustion as the major source of NO_x. Transportation accounted for only 31.3% of the regional NO_x (12,803 tons) while stationary fuel combustion sources accounted for 59.8% of the total NO_x for the region. This large contribution by stationary fuel combustion (SFC) sources and in particular, as it is, by point source SFC sources is attributable to the five power plants operating in the region in 1970. These accounted for approximately 90% of the stationary fuel combustion category's 24,424 tons of NO_x emissions during 1970 for the region. Solid waste disposal and miscellaneous area sources contributed a relatively minor 0.9% and 1.0% respectively to the regional total of Nitrogen Oxides emissions. The pie charts of Figure 5.8 best illustrate the relative contributions of the various source categories.

5.2.5 Huntington-Ashland-Portsmouth-Ironton Interstate Air Quality Control Region (Kentucky Portion) (Referred to herein as the Huntington-Ashland Region)

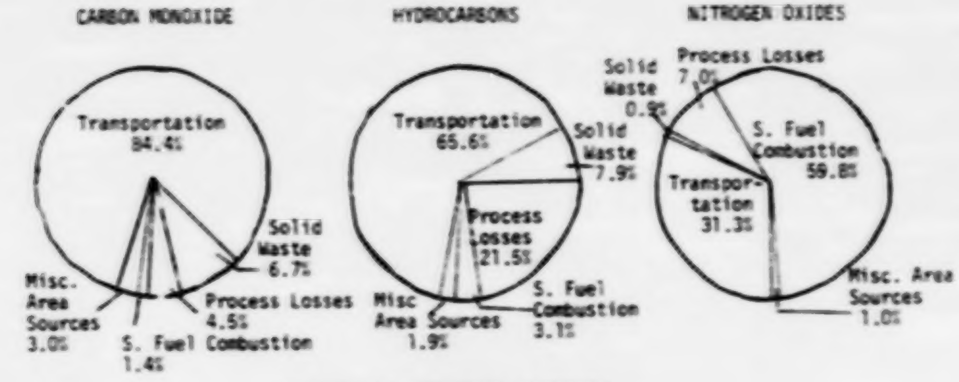
Carbon Monoxide (CO) emissions in the Huntington-Ashland Region amounted to 6.3% of the total Kentucky CO emissions. This is the second lowest ranking region in CO emissions in the state. Transportation, as can be seen from Figure 5.8, is the largest CO emitter in the region with Process Losses being second. Petroleum refining and petrochemical operations made up about 64% of the total process loss CO emissions. Metallurgical operations contributed the bulk of the remaining 36%.

Regional hydrocarbons (HC) emissions made up 8.0% of the state's total HC emissions. The major portion of HC in the region came from transportation (47.3%) with a nearly equal portion (42.6%) coming from process losses, primarily petroleum refining and petrochemical operations. Miscellaneous area sources were minimal contributors of HC with only 0.9% of the regional total.

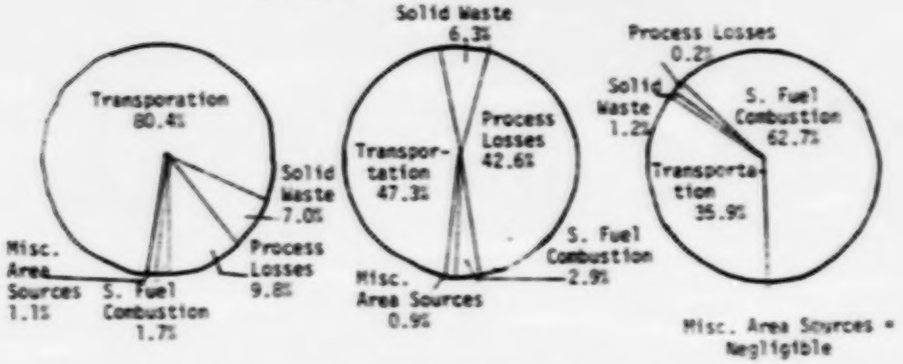
Nitrogen oxides (NO_x) emissions amounted to 6.7% of the state's total NO_x emissions. Stationary fuel combustion, particularly by point sources, was top contributor with 62.7% of the regional total NO_x emissions. The bulk (or about 80%) of the NO_x emissions from stationary fuel combustion came from power plants in the region. Transportation accounted for 35.9% of the total NO_x in the region to place second in rank. Miscellaneous area source emissions were negligible and process losses amounted to only 0.2% of the regional NO_x total. Figure 5.8 gives the completed NO_x picture.

5.2.6 Louisville Interstate Air Quality Control Region (Kentucky Portion)

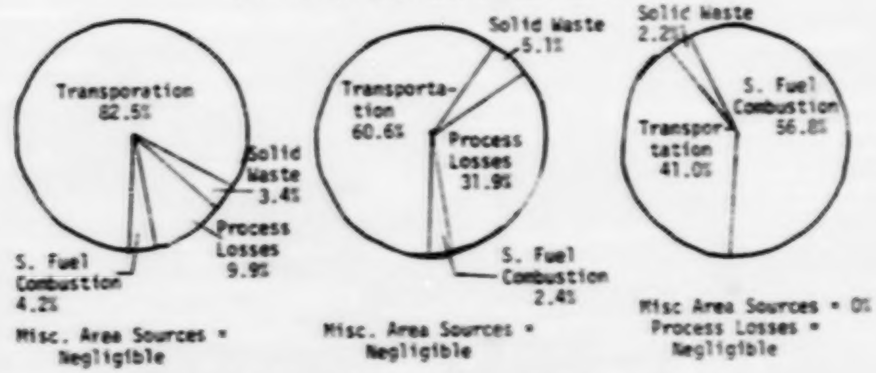
Carbon Monoxide (CO) emissions for the Louisville region in 1970 amounted to 255,077 tons. This is 16.5% of the state's total CO emissions. Transportation accounted for 82.5% of the regional total or 210,563 tons. This was the maximum contributor. The next highest contributor was the process losses category with 25,200 tons (9.9%). Petroleum Refining and petrochemical operations contributed the bulk (98%) of the process CO. Miscellaneous area source emissions of CO were negligible relative to the regional total.



EVANSVILLE-OWENSBORO-HENDERSON
INTERSTATE AIR QUALITY CONTROL REGION*



HUNTINGTON-ASHLAND-PORTSMOUTH-IRONTON
INTERSTATE AIR QUALITY CONTROL REGION



LOUISVILLE INTERSTATE AIR QUALITY CONTROL REGION
*(All Regions Above Represent Kentucky Portions Only)

Figure 5.8 Relative Contributions of Regional Total Source Category Emissions To Regional Pollutant Totals.

Hydrocarbons (HC) emissions for the region were 68,379 tons or 17.7% of the state's total HC emissions. Transportation sources account for the most of the HC emissions (60.6%). Process loss emissions of hydrocarbons amounted to 31.9% of the regional HC, coming up second in rank. Miscellaneous process point sources contributed the bulk (66%) of the HC from process losses. This is attributable primarily to solvent emissions from paint spray booths and printing facilities in the region. Miscellaneous area source emissions were negligible relative to the regional total HC emissions.

Nitrogen Oxides (NO_x) emissions for 1970 in the Louisville Region amounted to 69,447 tons or 12.0% of the state's total NO_x emissions. Stationary fuel combustion sources emitted 56.8% of the total regional NO_x or 39,438 tons, making stationary fuel combustion the top ranking contributor of NO_x in the region. Transportation ranks second with 28,456 tons or 41.0% of the regional total NO_x. The percentage contribution of process losses was negligible and miscellaneous area sources was nil.

5.2.7 North Central Air Quality Control Region

Transportation sources in the region during 1970 contributed more carbon monoxide, hydrocarbons, and nitrogen oxides than any other source category as seen in Figure 5.9.

Carbon monoxide (CO) emissions in the North Central Region for 1970 amounted to 128,338 tons or 8.3% of Kentucky's total CO emissions. The second largest contributor to this regional total was solid waste disposal with 5.1% of the total. Emissions from fuel combustion and miscellaneous area sources were nearly insignificant with percentage contributions to the regional pollutant total of 0.6% and 0.2% respectively. Process losses contributed a negligible percentage, only 2 tons of CO being emitted in 1970 for the region.

Hydrocarbons (HC) emissions in the region for 1970 were 45,448 tons or 10.9% of the state total HC emissions. The second largest contributor to this total, following transportation, was process losses which contributed 39.8% of the regional total HC. More than 60% of the 18,076 tons of HC emitted from process sources in 1970 in the region came from food and agricultural industries or almost exclusively from the distilling industry. Thirty-four-plus percent of the process HC came from the chemical process industries. Solid waste disposal ranked third in the region as an HC source showing 5.2% of the regional total. Stationary fuel combustion source emissions, as well as emissions from miscellaneous area sources, were very minor with relative contributions of 1.0% and 0.2% respectively.

Nitrogen Oxides (NO_x) emissions in the North Central Region amounted to 26,676 tons or only 4.6% of the state's total NO_x emissions. This places the region as the second-lowest NO_x contributor of all the state's

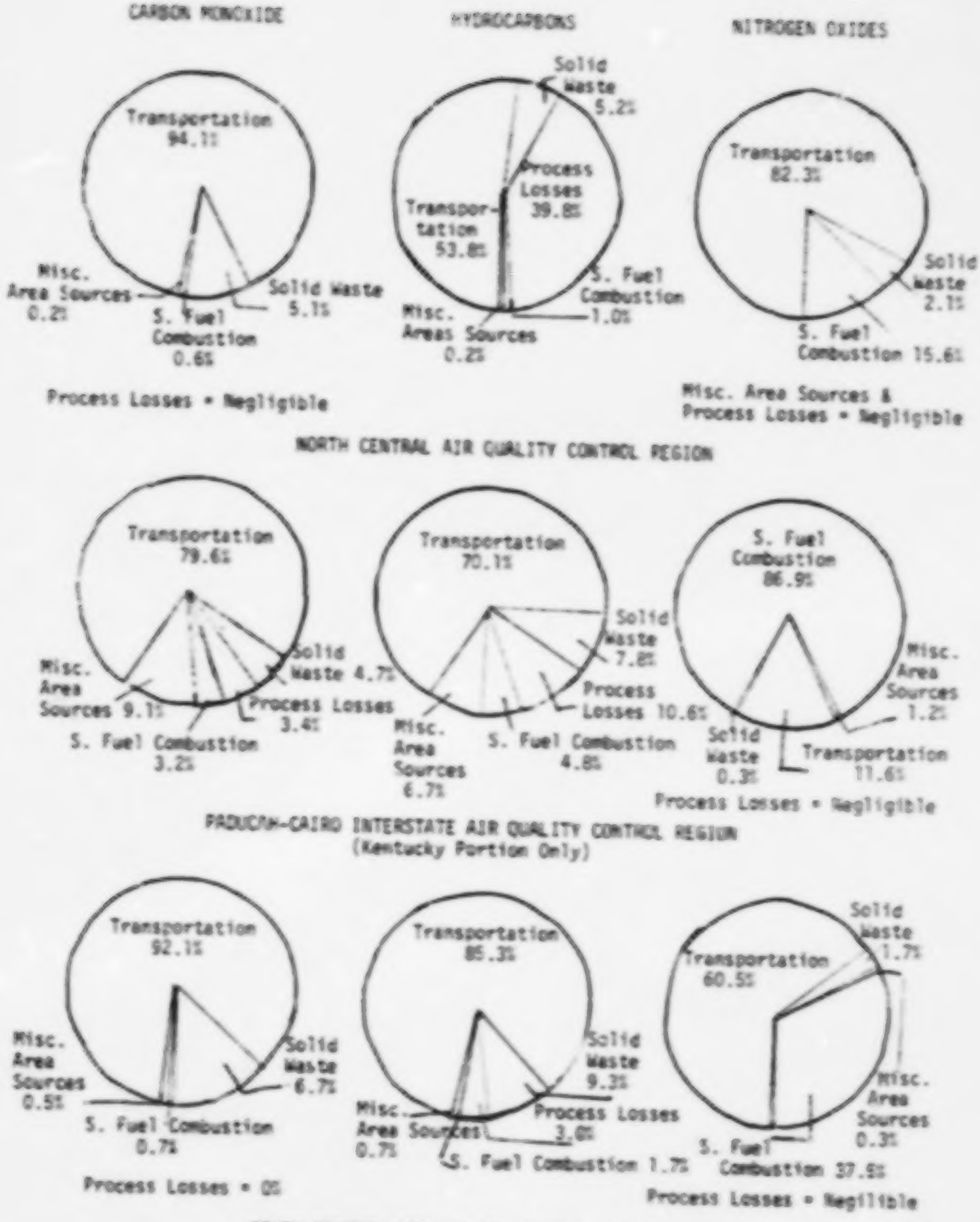


Figure 5.9 Relative Contributions of Regional Total Source Category Emissions to Regional Pollutant Totals

regions. As Figure 5.9 shows, transportation was by far the largest contributor to the regional total, followed by stationary fuel combustion with 15.6% of the regional NO_x emissions. Solid waste disposal contributed only 2.1% of the regional total and the percentage contributions of process losses and miscellaneous area sources were negligible.

5.2.8 Paducah-Cairo Interstate Air Quality Control Region (Kentucky Portion)

Carbon Monoxide (CO) emissions in the Paducah-Cairo Region amounted to 201,464 tons in 1970 or 13.1% of the state's total CO emissions. Transportation had the highest relative contribution of 79.6% (160,426 tons). Second ranked was miscellaneous area sources (Primarily burning coal refuse) with 9.1% of the total regional CO. The three remaining categories, stationary fuel combustion, process losses, and solid waste disposal were nearly equal with relative contributions of 3.2%, 3.4% and 4.7% respectively.

Hydrocarbons (HC) emissions for the region were 46,191 tons or 11.1% of the state's total HC emissions. As in the case of CO for the region, transportation ranked highest in emissions of HC, accounting for 70.1% of the regional total hydrocarbons. Process losses, primarily chemical process industries ranked second with 10.6%. The next three categories in order of descending rank were solid waste disposal (7.8%), miscellaneous area sources (6.7%) and stationary fuel combustion with 4.8% of the regional total HC.

Nitrogen Oxides (NO_x) emissions for this region were 243,164 tons. This is 42.1% of the state's total NO_x emissions. Consequently, the Paducah-Cairo region is the highest regional emitter of NO_x. Stationary fuel combustion sources are the largest contributors of NO_x. These account for 86.9% of the region's total NO_x emissions. Point source stationary fuel combustion facilities emitted the bulk (99%) of this category's 211,263 tons in 1970. Coal-fired power plants in the region accounted for 98% of the region's total stationary fuel combustion NO_x emissions. Transportation ranked second in the region as an NO_x emitting source category, accounting for 11.6% of the total regional NO_x. Miscellaneous area sources and solid waste disposal ranked third and fourth with respective contributions of 1.2% and 0.3%. Process losses were negligible with respect to the NO_x regional total.

5.2.9 South Central Air Quality Control Region

Carbon Monoxide (CO) emissions in the region for 1970 amounted to 152,361 tons or 9.9% of Kentucky's total CO emissions. Transportation accounts for 92.1% of the regional total CO. Solid waste disposal ranked second, accounting for only 6.7% of the regional total. Emissions from stationary fuel combustion and miscellaneous area sources were very small with relative contributions of 0.7% and 0.5% respectively. There were no CO emissions from process losses in the region in 1970.

Hydrocarbons (HC) emissions in the region were 33,017 tons or 8.0% of the state's total HC emissions. By far, the largest HC-emitting category in the region was transportation which accounted for 85.3% of the hydrocarbons in the region. Solid waste disposal ranked second with 3,069 tons of HC emissions or 9.3% of the regional total. The three remaining categories in order of descending relative contributions are process losses (3.0%), stationary fuel combustion (1.7%) and miscellaneous area sources with 0.7% of the regional total HC emissions.

Nitrogen Oxides (NO_x) emissions in the South Central region for 1970 were 40,161 tons. This was 7.0% of the state's total NO_x emissions. Sixty and one-half percent of the total NO_x for the region resulted from transportation. Second in rank was stationary fuel combustion which accounted for 37.5% of the region's total NO_x emissions. Point sources account for the bulk (81%) of the stationary fuel combustion total. A power plant and a liquid hydrocarbon plant collectively made up about 80% of these point source emissions. Solid waste disposal and miscellaneous area sources rank third and fourth with relative contributions to the NO_x regional total of 1.7% and 0.3% respectively. Process losses of NO_x in the region were negligible relative to the regional total, the total NO_x emissions from this category being only 21 tons.

5.3 AIR QUALITY DATA

Data showing existing air quality with respect to nitrogen dioxide, photochemical oxidants, and carbon monoxide for the Metropolitan Cincinnati and the Louisville Interstate Air Quality Control Regions, are submitted in Tables 5.8 and 5.9. These regions are classified Priority I with respect to nitrogen dioxides and photochemical oxidants and Priority III with respect to carbon monoxide. The data were obtained through a cooperative three month study[1] coordinated by Office of Air Programs, Environmental Protection Agency during the month of June through September, 1971.

5.3.1 Metropolitan Cincinnati Interstate Air Quality Control Region

Air monitoring for nitrogen dioxide, using the 24-hour bubbler type samplers, was conducted in two areas; Covington, Kentucky and Cincinnati, Ohio. Carbon monoxide and photochemical oxidants data were gathered at the Cincinnati CAMP station operated by the City of Cincinnati, Air Pollution Control Office. The data are submitted in Table 5.8.

The national and state primary standard of 0.05 parts per million, annual arithmetic mean for nitrogen dioxide was exceeded at both sites.

The one-hour national and state standard for carbon monoxide of 35 parts per million was not exceeded. However the eight-hour national and state carbon monoxide standard of 9 parts per million was exceeded.

TABLE 5.8 SUMMARY OF AIR QUALITY DATA AS SITES WITHIN THE METROPOLITAN CINCINNATI INTERSTATE AIR QUALITY CONTROL REGION (PPM[a])

POLLUTANT	STA. NO.	SITE LOCATION UTM[b](Km)			PERIOD	NO. OBS.	MAXIMUM 1-HOUR	MAXIMUM 8-HOUR	MAXIMUM 24-HOUR	ANNUAL ARITHMETIC MEAN
		ADDRESS	NORTHING	EASTING						
Carbon Monoxide[d] (CO)	CAMP	Central & Cincinnati			5/17/71-9/19/71	3024[c]	15.0	10.2	--	--
Photochemical Oxidants[e] (O_3)	CAMP	Central & Ann Cincinnati			5/17/71-9/19/71	180[c]	0.124	--	--	--
Nitrogen Dioxide[f] (NO_2)	35	7th & Scott Covington	4328.8	715.5	7/5/71-9/30/71	29[f]	--	--	0.177	0.085

a. 1 ppm CO = 1.145 mg/m^3, referenced to 25^{0}C and 760 mm Hg

1 ppm O_3 = 1963 ug/m^3, referenced to 25^{0}C and 760 mm Hg

1 ppm NO_2 = 2000 ug/m^3, referenced to 25^{0}C and 760 mm Hg

b. UTM Zone 16

c. One-hour averages

d. Non dispersive Infrared Method - Continuous

e. Colorimetric Neutral Potassium Iodide Method - Continuous

f. Jacobs-Hochheiser Method - 24-hour bubbler sample every 3 days

Both the national and state primary standards for photochemical oxidants of 0.08 parts per million, 1-hour maximum, corrected for contribution of nitrogen dioxide and nitric oxide, were exceeded.

5.3.2 Louisville Interstate Air Quality Control Region

Air quality monitoring for nitrogen dioxide, photochemical oxidants (measured as ozone) and carbon monoxide was conducted within the city limits of Louisville. The sampling sites were tended by the staff of the Air Pollution Control District of Jefferson County. The data are submitted in Table 5.9.

The estimated annual arithmetic mean for nitrogen dioxide in Louisville exceeded national and state primary standard of 0.05 parts per million.

The carbon monoxide levels measured were in excess of the national and state primary standard of 9 parts per million, 8-hour average, on two separate days.

Levels for photochemical oxidants measured as ozone exceeded both the national and state primary standard of 0.08 parts per million, one-hour maximum.

5.4 REFERENCES

1. 1971 Implementation Plan Summer Study for Carbon Monoxide, Nitrogen Dioxide and Photochemical Oxidants, coordinated by Division of Atmospheric Surveillance, Environmental Protection Agency, Research Triangle Park, North Carolina, 27711.

2. Control of Air Pollution From New Motor Vehicles and New Motor Vehicle Engines, 45 CFR 1201.

3. Economic Projections for Air Quality Control Regions, U.S. Department of Commerce, June 10, 1970.

4. Requirements for Preparation, Adoption, and Submittal of Implementation Plans published in the Federal Register, August 14, 1971 (42 CFR 420) pursuant to requirements of the Clean Air Act (as amended).

TABLE 5.9 SUMMARY OF AIR QUALITY DATA AT THE KENTUCKY SITES WITHIN THE LOUISVILLE INTERSTATE AIR QUALITY CONTROL REGION (PPM[a])

POLLUTANT	STA.[g] NO.	SITE LOCATION UTM[b] (Km)			PERIOD	NO. OBS.	MAXIMUM 1-Hr.	MAXIMUM 8-Hr.	MAXIMUM 24-Hr.	ANNUAL ARITHMETIC MEAN
		ADDRESS	NORTHING	EASTING						
Carbon Monoxide[d] (CO)	31	621 W. Jefferson St., Louisville	4234.6	608.3	7/12/71-9/28/71	1584[c]	17.0	10.8	-	-
Photochemical Oxidants[e] (O_3)	48	V.A. Hosp., Zorn Ave., Louisville	4236.4	614.0	7/1/71-9/30/71	1836[c]	0.14	-	-	-
Nitrogen Dioxide[f] (NO_2)	46	Eastern Pkwy. & 3rd., Louisville	4229.9	608.9	7/5/71-9/30/71	29[f]	-	-	0.162	0.086

a. 1 ppm CO = 1.145 mg/m^3, referenced to 25°C and 760 mm Hg

1 ppm O_3 = 1963 ug/m^3, referenced to 25°C and 760 mm Hg

1 ppm NO_2 = 2000 ug/m^3, referenced to 25°C and 760 mm Hg

b. UTM Zone 16

c. One-hour averages

d. Non-dispersive Infrared Method - Continuous

e. Chemiluminescence Method - Continuous

f. Jacobs-Hochheiser Method - 24-hour bubbler sample every 3 days

g. Jefferson County Air Pollution Control District Designations

REGULATION NO. AP-4

KENTUCKY AIR POLLUTION CONTROL COMMISSION

SUBJECT: Control of Sulfur Compound Emissions

1. Emissions from Indirect Heat Exchangers

(1) New Installations of Indirect Heat Exchangers

(a) No person shall cause, suffer, allow or permit the emission of sulfur dioxide into the open air from any new installations of indirect heat exchangers having a rated capacity of 250 million BTU per hour or more heat input, in excess of:

(i) 0.8 lb. per million BTU heat input, maximum 2-hour average, when liquid fuel is burned;

(ii) 1.2 lb. per million BTU heat input, maximum 2-hour average, when solid fuel is burned.

(b) No person shall cause, suffer, allow or permit the emission of sulfur dioxide into the open air from any new installation of indirect heat exchangers of less than 250 million BTU/hour in excess of those amounts listed in Table 4-1 and shown in Figures 4.1 and 4.2 all of which are incorporated as part of this regulation.

TABLE 4-1

ALLOWABLE SULFUR DIOXIDE EMISSION
BASED ON HEAT INPUT CAPACITY

MM BTU/Hour Heat Input	NEW INSTALLATION	
	Liquid Fuel	Solid Fuel
10 or less	2.50	4.0
50	1.40	2.4
100	1.10	1.7
150	0.95	1.4
200	0.86	1.3
250 or more	0.80	1.2

(2) Existing Installations of Heat Exchangers--Regions classified as Priority I with respect to sulfur dioxide.

(a) No person shall cause, suffer, allow or permit the emission of sulfur dioxide into the open air from any existing installation of indirect heat exchangers having a rated capacity of 250 BTU per hour or more heat input, in excess of:

(i) 0.8 lb. per million BTU heat input, maximum 2-hour average, when liquid fuel is burned;

(ii) 1.2 lb. per million BTU heat input, maximum 2-hour average when solid fuel is burned.

(b) No person shall cause, suffer, allow or permit the emission of sulfur dioxide into the open air from any existing installation of indirect heat exchangers of less than 250 million BTU per hour input, in excess of those amounts listed in Table 4.2, and shown in Figures 4.1 and 4.2, all of which are incorporated as part of this regulation.

(3) Existing Installations of Indirect Heat Exchangers--Regions classified as Priority II with respect to sulfur dioxide.

(a) No person shall cause, suffer, allow or permit the emission of sulfur dioxide into the open air from any existing installations of indirect heat exchangers having a rated capacity of 500 BTU per hour or more heat input, in excess of:

(i) 1.5 lb. per million BTU heat input, maximum 2-hour average, when liquid fuels are burned;

(ii) 2.0 lb. per million BTU heat input, maximum 2-hour average, when solid fuel is burned.

(b) No person shall cause, suffer, allow or permit the emission of sulfur dioxide into the open air from any existing installation of indirect heat exchangers of less than 500 million BTU per hour heat input, in excess of those amounts listed in Table 4.2, and shown in Figures 4.1 and 4.2, all of which are incorporated as part of this regulation.

(4) Existing Installations of Indirect Heat Exchangers--Regions classified as Priority III with respect to sulfur dioxide.

(a) No person shall cause, suffer, allow or permit the emission of sulfur dioxide into the open air from any existing installations of indirect heat exchangers having a rated capacity of 1000 million BTU per hour or more heat input, in excess of:

(i) 2.0 lb. per million BTU heat input, maximum 2-hour average, when liquid fuel is burned;

(ii) 3.5 lb. per million BTU heat input, maximum 2-hour average, when solid fuel is burned.

(b) No person shall cause, suffer, allow or permit the emission of sulfur dioxide into the open air from any existing installation of indirect heat exchangers of less than 1000 million BTU per hour heat input, in excess of those amounts listed in Table 4.2, and shown in Figures 4.1 and 4.2, all of which are incorporated as part of this regulation.

(5) Maximum Emissions from Indirect Heat Exchangers

(a) No person shall construct any new indirect heat exchanger or modify any existing indirect heat exchanger so that its total emissions exceeds 500 tons of sulfur dioxide per day.

(b) No person shall construct any new indirect heat exchanger or modify any existing indirect heat exchanger where two or more indirect heat exchangers, including that indirect heat exchanger for which construction or modification is proposed, and which individually emit 100 tons per year or more of sulfur dioxide, are contained within a circle 10 miles in diameter, and the total emissions of all such indirect heat exchangers is 750 tons per day of sulfur dioxide.

(6) For any given indirect heat exchanger air contaminant source the combined total capacity of all fuel burning units in that air contaminant source shall determine the amount of allowable sulfur dioxide emissions.

2. Emissions from Sulfuric Acid Plants

(1) New Installations of Sulfuric Acid Plants

No person shall cause, suffer, allow or permit the following emission into the open air from any new installation of sulfuric acid plants:

(a) Sulfur Dioxide in the effluent in excess of 4 pounds per ton of acid (98%) produced, maximum 2-hour average;

(b) Sulfur acid mist in the effluent in excess of 0.15 pounds per tons of acid (98%) produced, maximum 2-hour average, expressed as H_2SO_4;

(c) A visible emission which is equal to or greater than 10 percent opacity (as dark as, or darker than, the shade considered to be No. 1/2 on the Ringelmann Chart).

(2) Existing Installations of Sulfuric Acid Plants

No person shall cause, suffer, allow or permit the following emissions into the open air from any existing installations of dry gas operation sulfuric acid plants:

(a) Sulfur dioxide in the effluent in excess of 27 pounds per ton of acid (98%) produced, maximum 2-hour average;

(b) Sulfur acid mist in the effluent in excess of 0.90 pound per ton of acid (98%) produced, maximum 2-hour average;

(c) A visible emission which is greater than 20 percent opacity (darker in shade than that designated as No. 1 on the Ringelmann Chart).

3. Emissions from Petroleum Refineries, By-Product Coke Plants, and Other Processes

(1) In regions classified as Priority I with respect to sulfur dioxide, no person shall cause, suffer, allow or permit the emission or combustion of any refinery process gas stream or any other process gas stream that contains H_sS in concentration greater than 10 grains per 100 cubic feet of gas without removal of the hydrogen sulfide in excess of this concentration.

(2) In regions classified as Priority I with respect to sulfur dioxide, no person shall cause, suffer, allow or permit the emission of any process gas stream that contains sulfur dioxide in a concentration greater than 2000 parts per million by volume.

4. Emissions from Sulfite Pulp Mills

(1) No person shall cause or permit the total sulfite pulp mill sulfur oxide emissions from blow pits, washer vents, storage tanks, digester relief, recovery system, etc. to exceed 9.0 lb. per air dried ton of pulp produced.

5. Emissions from Kraft (Sulfate) Pulp Mills

(1) Definitions

For the purpose of this section, the following definitions apply:

(a) Total Reduced Sulfur (TRS)--means all reduced sulfur compounds including but not limited to hydrogen sulfide (H_2S), methyl mercaptan, dimethyl sulfide and dimethyl disulfide, expressed in terms of hydrogen sulfide (H_2S).

(2) No person shall cause or permit total reduced sulfur emissions from the recovery furnace of any kraft pulp mill in excess of 0.5 pounds per ton of air dried pulp produced, or in excess of an exit stack gas concentration of 17.5 parts per million by volume, whichever is more restrictive.

(3) No person shall cause or permit the emission of various noncondensible gas streams from brown stack washers, digester relief, blow tank relief evaporator hot wells, multiple effect evaporators, or weak and strong black liquor storage tanks containing total reduced sulfur in a kraft pulp mill unless treated by thermal oxidation or an equivalent method.

6. Time Schedule for Compliance

(1) For the purpose of this section, the following time tables shall apply, however, all air contaminants sources covered under this section are required to submit a control plan and schedule for compliance as outlined in AP-1, Sec. 11(2):

(a) Those indirect heat exchangers described in Section 1(2) submit a control plan and schedule no later than January 1, 1973, with a compliance date of no later than July 1, 1977;

(b) Those indirect heat exchangers described in Section 1(3) submit a control plan and schedule no later than January 1, 1973, with a compliance date of no later than July 1, 1978;

(c) Those indirect heat exchangers described in Section 1(4) submit a control plan and schedule no later than January 1, 1973, with a compliance date of no later than July 1, 1979;

(d) All other air contaminant sources governed by this section shall comply as specified in AP-1, Sec. 11.

7. Testing and Sampling

(1) Stack tests to determine compliance with the sulfur dioxide emission standards of Section 1 shall be conducted in accordance with the applicable procedures of Method 1, 2, 3, and 6 as specified in AP-1, Sec. 7(3) of these regulations.

(2) Stack tests to determine compliance with the sulfur dioxide emission standards of Sections 2(1) and 2(2) shall be conducted in accordance with the applicable procedures of Methods 1, 2, 3, and 8 as specified in AP-1, Sec. 7(3) of these regulations.

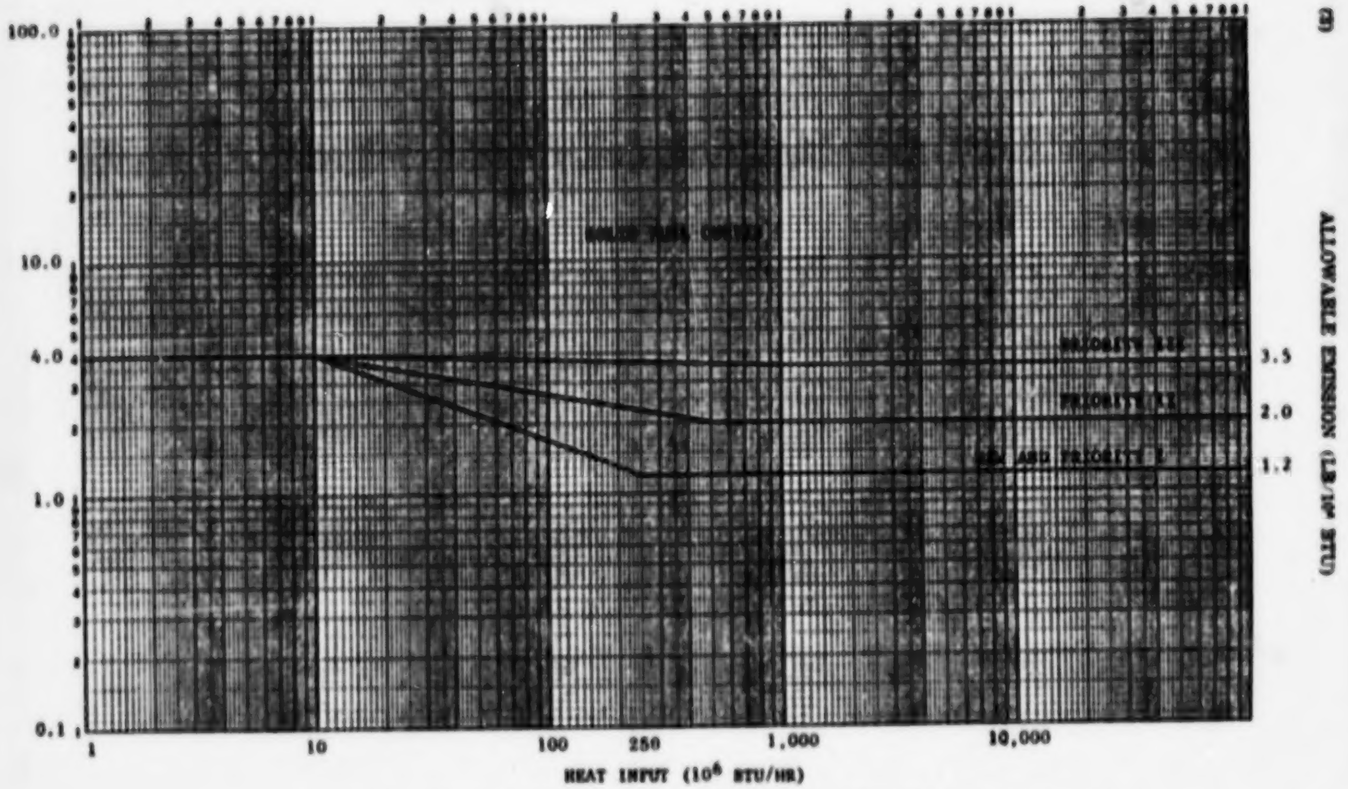


FIGURE 4.1 ALLOWABLE SULFUR DIOXIDE EMISSIONS BASED ON HEAT INPUT CAPACITY

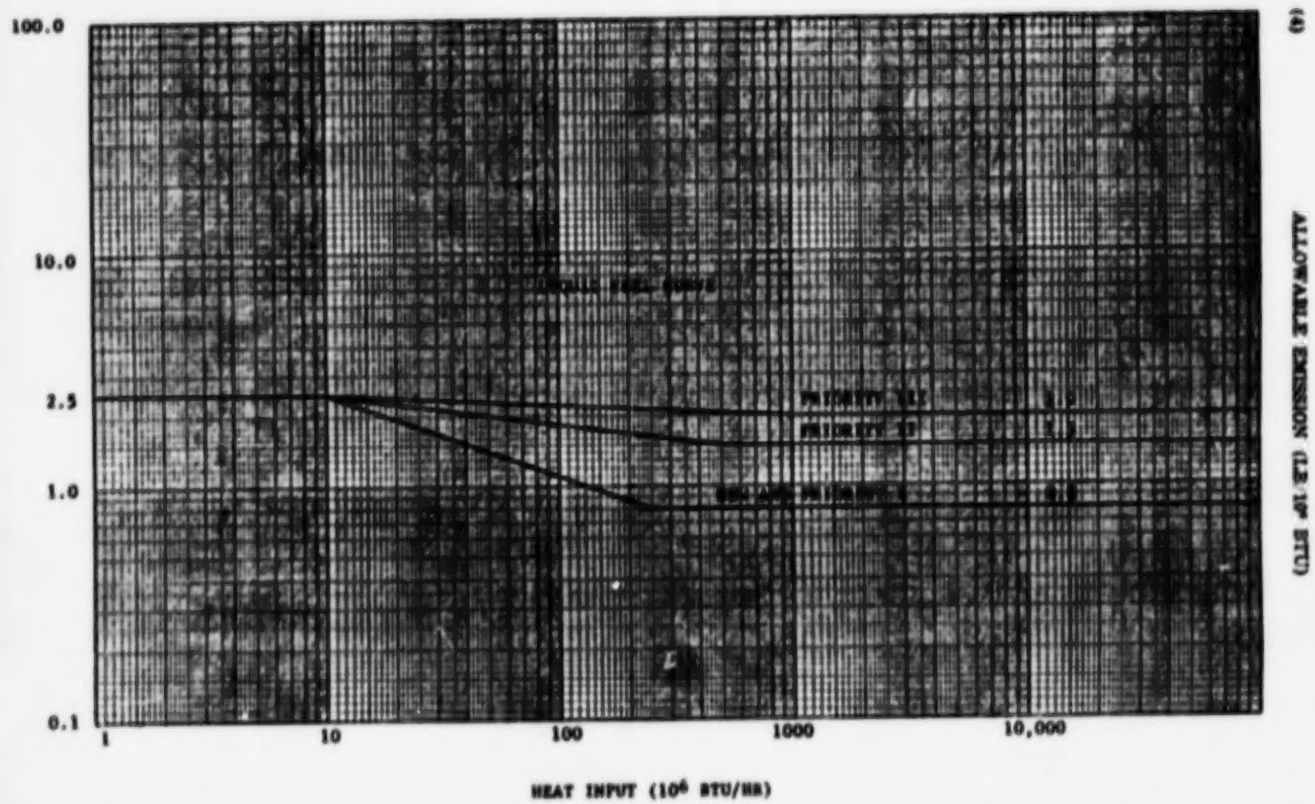


FIGURE 4.2 ALLOWABLE SULFUR DIOXIDE EMISSIONS BASED ON HEAT INPUT CAPACITY

TABLE 4.2

ALLOWABLE SULFUR DIOXIDE EMISSIONS BASED ON HEAT INPUT CAPACITY

MM BTU/HOUR HEAT INPUT	EXISTING INSTALLATION					
	PRIORITY I		PRIORITY II		PRIORITY III	
(fuel:)	Liquid	Solid	Liquid	Solid	Liquid	Solid
10 or less	2.50	4.0	2.5	4.0	2.50	4.0
50	1.14	2.2	2.02	3.0	2.32	3.8
100	1.11	1.7	1.85	2.7	2.24	3.7
150	0.96	1.5	1.75	2.5	2.20	3.7
250	0.8	1.2	1.64	2.3	2.14	3.6
500	0.8	1.2	1.5	2.0	2.07	3.6
1,000	0.8	1.2	1.5	2.0	2.00	3.5
10,000	0.8	1.2	1.5	2.0	2.00	3.5

REGULATION NO. AP-8

KENTUCKY AIR POLLUTION
CONTROL COMMISION

SUBJECT: Control of Coal Refuse Area

1. Applicability

(1) The provisions of AP-1, Sec. 4(1) and 5(1) shall apply to the operation of coal refuse disposal areas.

(2) The procedures outlined in this section will be used as a basis for approval of coal refuse disposal areas:

(a) Coal refuse is not to be deposited on any coal refuse disposal area unless the coal refuse is deposited in such a manner as to minimize the possibility of ignition of the coal refuse;

(b) Coal refuse disposal areas shall not be so located with respect to mine openings, tipples, or other mine buildings, unprotected coal outcrops or steam lines, that these external factors will contribute to the ignition of the coal refuse on such coal refuse disposal areas;

(c) Vegetation and combustible materials shall not be left on the ground at the site where a coal refuse pile is to be established, unless it is rendered inert before coal refuse is deposited on such site;

(d) Coal refuse shall not be dumped on deposited on a coal refuse pile known to be burning;

(e) Material with low ignition points used in the production or preparation of coal, including but not limited to wood, brattice cloth, waste paper, rags, oil and grease, shall not be deposited on any coal refuse disposal area or in such proximity as will reasonably contribute to the ignition of a coal refuse disposal area;

(f) The site of the coal refuse disposal area is to be such that water run off from the adjacent area will not drain into the coal refuse;

(g) Coal refuse is to be deposited in such manner that it will not slide or shift so as to enhance the possibility of ignition;

(h) Garbage, trash, household refuse, and like materials shall not be deposited on or near any coal refuse disposal area.

2. Deliberate Ignition Prohibited

(1) Deliberate ignition of a coal refuse disposal area is prohibited.

(2) The deliberate ignition of a coal refuse disposal area or the ignition of any materials on such an area by any person or persons is prohibited.

3. Burning Coal Refuse Disposal Areas

(1) Each burning coal refuse disposal area will be considered on an individual basis by the Commission. After considering the established facts and circumstances of the particular case, the Commission will determine and may order the effectuation of those air pollution control measures which the Commission deems reasonably adequate for each such coal refuse disposal area.

(2) With respect to all other burning coal refuse disposal areas, the person responsible for such coal refuse disposal areas or the land on which such coal refuse disposal areas are located shall use due diligence to control air pollution from such coal refuse disposal areas. The Commission shall determine what constitutes due diligence.

(3) When the Commission determines that air pollution exists or may be created, the person responsible for such coal refuse disposal area or the land owner on which such coal refuse disposal area is located shall submit to the Commission a satisfactory program setting forth methods and procedures to eliminate, prevent, or reduce such air pollution. This program shall be submitted within thirty (30) days after notification and shall contain sufficient information to establish that such program can be executed with due diligence.

REGULATION NO. AP-9

KENTUCKY AIR POLLUTION CONTROL COMMISSION

SUBJECT: Ambient Air Quality Standards

1. Purpose of Standards and Expression on Non-Degradation Intention

(1) Primary ambient air quality standards define levels of air quality which the Commision judges are necessary, with an adequate margin of safety, to protect the public health. Secondary ambient air quality standards define levels of air quality which the Commission judges necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Such standards are subject to revision, and additional primary and secondary standards may be promulgated as the Commission deems necessary to protect the public health and welfare.

(2) In the establishment of these air quality standards, it is the intention of the Commission to prohibit further significant and avoidable deterioration of air quality in areas where air quality presently exists which is numerically equal to or less than the standards expressed herein.

(3) The proposal, promulgation, or revision of these primary and secondary ambient air quality standards shall not prohibit any District from establishing ambient air quality standards for that District or any portion thereof which are more stringent than are the standards herein.

(4) No person or air contaminant source shall cause, suffer, allow or permit the air quality standards specified herein to be exceeded.

2. Air Contaminant Concentrations

The following air contaminant concentrations shall apply at any single point location:

	Primary Standard	Secondary Standard
(1) Sulfur Oxides (Sulfur Dioxide)-- ug/M^3	80 (0.03 ppm)	60 (0.02 ppm)
Annual Arithmetic Mean, not to exceed	365 (0.14 ppm)	---

	Primary Standard	Secondary Standard
(1) Sulfur Oxides (Sulfur Dioxide--μg/M^3		
Annual Arithmetic Mean, not to exceed	80(0.03ppm)	60(0.02ppm)
Maximum Twenty-Four-Hour Average	365(0.14ppm)	---
Maximum Three-Hour Average	---	1300(0.50ppm)
(2) Particulate Matter		
(a) Suspended Particulates--μg/M^3		
Annual Geometric Mean not to exceed	75	60
Maximum Twenty-Four-Hour Average	260	150
(b) Setteable Particulates (Dustfall) (Tons/square mile/ measured as total water solubles & insolubles)		
Maximum Three-Month Average	---	15(5.25/gm/sq. meter/mo.)
(c) Soiling Index		
Annual Geometric Mean, not to exceed	---	0.4 COH/1000 linear ft.
Maximum Three-Month Average	---	0.5 COH/1000 linear ft.
Maximum Twenty-Four-Hour Average	6.0 COH/1000 linear ft.	3.0 COH/1000 linear ft.
(3) Carbon Monoxide--mg/M^3		
Maximum Eight-Hour Average	10(9ppm)	Same as Primary
Maximum One-Hour Average	40(35ppm)	Same as Primary
(4) Photochemical Oxidants (mearsured as Ozone)--μg/M^3		
Maximum One-Hour Average	160(0.08ppm)	Same as Primary
(5) Total Nonmethane Hydrocarbons (measured as C)--μg/M^3		
Maximum Three-Hour Morning Average (6-9 A.M.)	160(0.24ppm)	Same as Primary
(6) Nitrogen Oxides--μg/M^3		
Annual Arithmetic Mean, not to exceed	100(0.05ppm)	Same as Primary
(7) Hydrogen Sulfide--μg/M^3		
Maximum One-Hour Average	---	14(0.01ppm)
(8) Hydrogen Fluoride--μg/M^3		
Maximum One-Month Average	0.82(1ppb)	---
Maximum One-Week Average	1.64(2ppb)	---
Maximum Twenty-Four-Hour Average	2.86(3.5ppb)	---
Maximum Twelve-Hour Average	3.68(4.5ppb)	---

	Primary Standard	Secondary Standard
(9) Total Fluorides--ppm Dry weight basis (as F^-) in and on forage for consumption by grazing ruminants The following concentrations are not to be exceeded: Average concentrations of monthly samples over growing season (not to exceed 6 consecutive months)	40 ppm (w/w)	---
Maximum Two-Month Average	60 ppm (w/w)	---
Maximum One-Month Average	80 ppm (w/w)	---
(10) Orders At any time not to equal or exceed	---	7 dilutions

3. Time Schedule for Achieving Ambient Air Quality Standards

(1) Primary air quality standards shall be achieved within three years of the effective date of this regulation.

(2) Secondary air quality standards shall be achieved within a reasonable period of time but in no case longer than six years after the effective date of this regulation except as provided in AP-4, Sec. 6.

4. Method of Measurement

(1) Air contaminants shall be measured by the method or methods and frequency listed in Table 9.1 or by such other methods approved by the Kentucky Air Pollution Control Commission.

(2) Annual averages and three-month averages shall be determined on the basis of any consecutive twelve-month interval or any consecutive three-month interval, respectively.

5. Abbreviations Used in This Regulation

gm = gram
mg = milligram
µg = microgram
M = meter
cm = centimeter
sq = square

mo = month
COH = coefficient of haze
ppm = parts per million by volume
ppb = parts per billion by volume
w/w = weight by weight

6. Conversion Between Volume and Mass Units of Concentration

Employing standard conditions of 25 degrees centigrade (Celsius) temperature and 760 millimeters of mercury pressure, the following equations are used to convert between volume units (ppm) and mass units ($\mu g/M^3$).

$$\text{ppm} = \frac{(\text{ug})}{M^3} \times \frac{0.02445}{\text{Molecular weight, gm/mole}}$$

$$g/M^3 = (\text{ppm}) \times \frac{\text{Molecular weight, gm/mole}}{0.02445}$$

Based on the above equations the following conversion factors are applied:

Pollutant	To Convert From PPM To ug/M^3 Multiply By	To Convert From ug/M^3 To PPM Multiply By
Sulfur Dioxide	2620	0.00038
Hydrogen Sulfide	1391	0.00072
Carbon Monoxide	1145	0.00087
Ozone	1963	0.00051
Hydrogen Fluoride	818	0.00122
Methane	655	0.00153
Nitrogen Dioxide	2000	0.00050

(2.0) 7. Reference Methods of Air Contaminants Measurements

TABLE 9.1

REFERENCE METHODS OF AIR CONTAMINANTS MEASUREMENTS

	MEASUREMENT METHOD[p]	MINIMUM FREQUENCY OF SAMPLING
Particulate Matter		
Suspended	Gravimetric, High Volume Sampler[a] Light Transmittance, AISI Tape Sampler[c]	One 24-hour sample every 6 days[b] One sample every 2 hours
Setteable	Gravimetric, Dustfall Jars[d]	One 1-month sample per month
Sulfur Dioxide	Pararosaniline[a] or equivalent[e]	One 24-hour gas bubbler sample every 6 days[b] Twelve 2-hour gas bubbler samples every 6 days[f] Continuous
Carbon Monoxide	Non-dispersive infrared[a] or equivalent[g]	Continuous
Photochemical Oxidants	Gas Phase Chemiluminescence[a] or equivalent[h]	Continuous
Nitrogen Dioxide	Jacobs-Hochheiser[a] or equivalent[i]	One 24-hour gas bubbler sample every 6 days[b] Continuous
Non-methane Hydrocarbons	Flame ionization gas chromatographic separation[a] or equivalent[j]	Semi-Continuous
Hydrogen Sulfide	Lead Acetate Tape Sampler[k] or equivalent[e]	One sample every hour Twelve 1-hour samples every 6 days[f]
Hydrogen Fluoride	SPADNS Colorimetric[m] or equivalent[n]	One 12-hour sample every 6 days[b]
Odor	Dilution[o]	

a. Method described in the National Primary and Secondary Ambient Air Quality Standards published in the Federal Register on April 30, 1971 (36 F.R. 8186)

b. Equivalent to 61 random samples per year

c. Hemeon, Haines and Ide, Air Repair, 3, 22 (1953)

d. ASTM D1739-62

e. Equivalent Methods are (1) Gas Chromatographic Separation, (2) Flame Photometric Detection (provided interfering sulfur compounds present in significant quantities are removed), (3) Coulometric Detection (provided oxidizing and reducing interference such as O_3, NO_2, and H_2S are removed), and (4) the automated Pararosaniline procedures

f. Equivalent to 742 random samples per year

g. Equivalent Method is Gas Chromatographic Separation--Catalytic Conversion--Flame Ionization Detection

h. Equivalent Methods are (1) Potassium Iodide Colorimetric Detection (provided a correction is made for SO_2 and NO_2), (2) U V Photometric Detection of ozone (provided compensation is made for interfering substances), and (3) Chemiluminescence Methods differing from that of the referenced method

i. Equivalent Method is continuous Saltzman Method Anal. Chem., 26, 1951 (1954)

j. Equivalent Method is activated Charcoal prescribing--Flame Ionization Detection, Ortman, Anal. Chem., 29, 1349 (1957)

k. Sensenbaugh and Hemeon, Air Repair, 4, 5 (1954)

l. Equivalent Method is Methylene Blue--Jacob, Braverman, Hochheiser, Anal. Chem., 29, 1349 (1957)

m. Bellacke and Schoutoe, Anal. Chem., 30, 2032 (1958)

n. Equivalent Method is utilizing Fluoride Ion Selective Electrode, Hardwood, Water Research, 3, 273 (1969)

o. Scentometer Method "Air Pollution", A.C. Stern, ed., Vol. 2, Academic Press, New York, 1968

p. Other methods together with those specified under footnotes (e), (g) and (h) will be considered equivalent if they meet the following performance specifications:

	POLLUTANTS		
SPECIFICATION	SULFUR DIOXIDE	CARBON MONOXIDE	PHOTOCHEMICAL OXIDANTS (corrected for NO_2 and SO_2)
Range	0-2,620ug/m^3 (0-1 ppm)	0-58mg/m_3 (0-50 ppm)	0-880ug/m^3 (0-0.5 ppm)
Minimum detectable sensitivity	26ug/m^3 (0.01 ppm)	0.6mg/m^3 (0.5 ppm)	20ug/m^3 (0.01 ppm)
Rise time, 90 percent	5 minutes	5 minutes	5 minutes
Fall time, 90 percent	5 minutes	5 minutes	5 minutes
Zero drift	±1 percent per day & ±2 percent per 3 days	±1 percent per day & ±2 percent per 3 days	±1 percent per day & ±2 percent per 3 days
Span drift	±1 percent per day & ±2 percent per 3 days	±1 percent per day & ±2 percent per 3 days	±1 percent per day & ±2 percent per 3 days
Precision	±2 percent	±4 percent	±4 percent
Operation period	3 days	3 days	3 days
Noise	±0.5 percent (full scale)	±0.5 percent (full scale)	±0.5 percent (full scale)
Interference Equivalent	26ug/m^3 (0.01 ppm)	1.1mg/m^3 (1 ppm)	20ug/m^3 (0.01 ppm)
Operating temperature fluctuation	±5°C.	±5°C.	±5°C
Linearity	2 percent (full scale)	2 percent (full scale)	2 percent (full scale)

The various specifications are defined as follows:

Range -- The minimum and maximum measurement limits;

Minimum detectable sensitivity -- The smallest amount of input concentration which can be detected as concentration approaches zero;

Rise time 90 percent -- The interval between initial response time and time to 90 percent response after a step increase in inlet concentration;

Fall time 90 percent -- The interval between initial response time and time to 90 percent response after a step decrease in inlet concentration;

Zero drift -- The charge in instrument output over a stated time period of unadjusted continuous operation, when the input concentration is zero;

Span drift -- The change in instrument output over a stated period of unadjusted continuous operation, when the input concentration is a stated upscale value;

Precision -- The degree of agreement between repeated measurements of the same concentration (which shall be the midpoint of the stated range) expressed as the average deviation of the single results from the mean;

Operation period -- The period of time over which the instrument can be expected to operate unattended within specifications;

Noise -- Spontaneous deviations from a mean output not caused by input concentrations changes;

Interference equivalent -- The portion of indicated concentration due to the total of the interferences commonly found in ambient air;

Operating temperature fluctuation -- The portion of indicated concentration over which stated specifications will be met;

Linearity -- The maximum deviation between an actual instrument reading and the reading predicted by a straight line drawn between upper and lower calibration points.

REGULATION NO. AP-10

KENTUCKY AIR POLLUTION CONTROL COMMISSION

SUBJECT: Rules of Practice

1. Purpose

This regulation governs the conduct of all proceedings before the Commission.

2. Definitions

As used in this regulation, unless otherwise required by the context, the following words and phrases shall have the meaning hereinafter respectively ascribed to them:

(1) "Applicant" means any person who shall apply to the Commission for a permit to construct or operate an air contaminant source pursuant to KRS 224.360; or any person who requests a hearing pursuant to KRS 224.390; or any person who shall apply for an exemption pursuant to KRS 224.410; or any person who shall file a petition alleging that the issuance of any order or the making of any determination by the Commission is contrary to law and fact and injurious to him; or any person who shall apply to the Commission for certification to any governmental agency that the air contaminant source for which the certification is sought complies with all statutes and regulations of the Commonwealth relating to air pollution control.

(2) "Permit" means the permission, in whatever form given, of the Commission to construct, alter, use, operate, or maintain an air contaminant source.

3. Administrative Examination of Applications

Applications for the issuance of a permit, amendment of a permit at the request of a holder, or renewal of a permit will be reviewed by the Executive Secretary. The application shall be made on a form provided by the Commission for that purpose. The Executive Secretary will give such notice of the filing of applications as is required under the applicable provisions of these regulations and such additional notices as he deem appropriate.

4. Action on Applications, Hearings

(1) The Executive Secretary shall either grant or deny any application for a permit and shall give written notice thereof to the applicant.

(2) The Executive Secretary may upon his own initiative, direct the holding of a formal hearing prior to taking action on the application. The Executive Secretary will direct the holding of a formal hearing upon receipt of a written request therefor from the applicant or intervenor filed within thirty (30) days after the grant or denial of a permit.

5. Effect of Timely Renewal Applications

If at least thirty (30) days prior to the expiration of an existing permit authorizing any activity of a continuing nature, a permittee files and application for a renewal or for a new permit for the activity so authorized, the existing permit will not be deemed to have expired until the application has been granted or denied.

6. Notice of Violation

Prior to the institution of any proceeding for the revocation of a permit or for penalty pursuant to statute for alleged violation of any provision of the act, regulations, or conditions of a permit, the party charged with the violation shall be served with a written notice calling the facts to his attention and requesting a written explanation or statement in reply. Within fifteen (15) days of the receipt of such notice, the party notified with the violation shall file his reply with the Commission. If the notice relates to conditions or conduct which may be susceptible of correction or of being brought into full compliance by action of the party charged with the violation, he shall state in his reply the corrective steps taken or to be instituted in achieving correction and preventing further violations, and the date when such correction and full compliance will be achieved.

7. Emergency Orders

Upon the issuance of any emergency order pursuant to the provisions of KRS 224.400 the Executive Secretary shall fix a place and time, not more than 24 hours thereafter, for a hearing to be held before the Commission in accordance with the provisions of this regulation. Not more than 24 hours after the conclusion of such a hearing, and without adjournment thereof, the Commission shall affirm, modify, or set aside the order of the Executive Secretary.

8. Certification

(1) The Executive Secretary shall certify to the appropriate governmental agency compliance with the statutes and regulations of the Commonwealth relating to air pollution on behalf of any party requesting such certification pursuant to any state or federal law provided the party making the request holds a valid permit to operate the air contaminant source for which the certification is sought.

(2) In no event shall the Executive Secretary certify to any governmental agency that any air contaminant source for which no valid permit to operate has been issued is in compliance with the statutes and regulations of the Commonwealth relating to air pollution.

9. Ex Parte Communications

(1) In no matter referred to the Commission or to a Hearing Officer for formal hearing, shall any person not a member or employee of the Commission or assigned to the Commission communicate ex parte with any member or employee of the Commission or any person assigned to the Commission other than counsel with respect to the merits of that matter prior to a final determination in the matter; nor shall any member or employee of the Commission or any person assigned to the Commission communicate with any Hearing Officer or member or members of the Commission with regard to any matter heard or to be heard for the adjudication by such Hearing Officer of member or members except as otherwise provided in this regulation.

(2) Subject to the exceptions in subsection (3) of this section, an unauthorized ex parte communication is any communication related to the proceeding unless at the time of its presentation the contents are disclosed to all participants and interested parties in the proceeding.

(3) The following communications shall not be considered unauthorized:

(a) Any request for information soley with respect to the status of the proceeding; or

(b) Any communication made with respect to a proceeding about which no public notice has been issued or the communicator has no actual notice of the pendency of the proceeding.

(4) Any member or employee of the Commission or any person assigned to the Commission who received a communication which he knows or has reason to believe is unauthorized, shall promptly place the communication, or its substance, in the public file, and shall inform all interested parties in the proceedings of its existence and shall notify the communicator of the provisions of this section.

(5) All participants and interested parties in a proceeding may request an opportunity to answer any allegations or contentions contained in an unauthorized ex parte communication. The Hearing Officer or the Commission before whom the matter is heard shall grant such request if it is determined that it would be unfair to deny the request.

10. Filing of Papers

Unless otherwise specified, papers required to be filed with the Commission shall be filed with the Executive Secretary of the Air Pollution Control Commission, State Department of Health, 275 East Main Street, Frankfort, Kentucky 40601. Papers required to be filed with the Commission shall be deemed filed upon actual receipt by the Commission at the place specified accompanied by proof of service upon the parties required to be served as provided in Section 13 of this regulation. Unless otherwise specified the filing when by mail or telegram shall upon actual receipt be deemed complete as of the date of deposit in the mail or with the telegraph company. Papers may be filed in person at the Commission's offices at 275 East Main Street, Frankfort, Kentucky.

11. Computation of Time

In computing any period of time prescribed or allowed by an applicable rule or regulation, notice or order, the provisions of KRS 446.030 shall apply.

12. Extention of Time

Extensions of time for filing or performing any act required or allowed to be done, and continuances of any proceeding or hearing, may be granted in the discretion of the Commission upon application and good cause shown by any party, or upon the initiative of the Commission or stipulation of all the parties. When a Hearing Officer has been designated for hearing, the discretion in granting extensions of time and continuances in matters relating to the hearing shall rest with the Hearing Officer

13. Subpoenas, Service and Papers

Pursuant to the powers conferred by KRS 224.430, the Commission may issue subpoenas, subpoenas duces tecum and all necessary process in proceedings brought before or initiated by the Commission and such process shall extend to all parts of the Commonwealth. Service of process and proof of service may be made by registered mail or in the manner prescribed by Rule 4, Rules of Civil Procedure. The Hearing Officer may issue any subpoena or subpoena duces tecum requested by any party and shall show on the face of any subpoena or subpoena duces tecum issued the party requesting the appearance.

14. Representation

(1) Except as provided in subsection (2) of this section any person appearing before the Commission may do so in person or by a representative. Any person transacting business with the Commission in a representative capacity may be required to show his authority to act in that capacity.

(2) In a formal hearing a person may appear in person or be representated by an Attorney at Law.

15. Intervention

(1) Any person whose interests may be affected by a proceeding may file a petition to intervene describing his interests, how it may be affected by Commission action, and the position he is taking in the matter. Service of copies of the petition shall be made upon all parties to the proceeding. The permittee, applicant, or respondent, upon notice and motion, and other parties by leave, may contest the right of the petitioner to intervene.

(2) As soon as is practible after filing of a petition for intervention and a hearing of argument, if any, the Commission or Hearing Officer will issue and serve an order either permitting or denying intervention. If the order is a denial of intervention, it shall contain a statement of the grounds. An order permitting intervention may be conditioned upon such terms as the Commission or Hearing Officer may direct.

16. Effect of Intervention or Denial Thereof

(1) A person permitted to intervene becomes a party to the proceedings where a notice of hearing has been issued or a

hearing has begun. The admission of an intervenor shall not of itself enlarge or alter the issue.

(2) An order denying intervention will be without prejudice to any proposed limited appearance by the petitioner as one who is not a party for the purposes provided in Section 22 of this regulation.

17. Consolidation

Upon motion and good cause shown or upon its own initiative the Commission or Hearing Officer may consolidate two or more proceedings.

18. Hearing -- Formal and Informal

(1) Formal hearings shall be held in cases of adjudication of rights.

(2) Informal hearings may be held for the purposes of obtaining necessary or useful information.

19. Authority to Administer Oaths

Any oath or affirmation required by or pursuant to the provisions of these regulations may be administered by any person authorized to administer oaths by the laws of the Commonwealth of Kentucky.

20. Informal Hearing Procedure

The procedure to be followed in informal hearings shall be such as will best serve the purpose of the hearing. An informal hearing may consist of the submission of written data, views, or arguments with or without oral argument, or may partake of the nature of a conference or may assume some of the aspects of a formal hearing in which the subpoena of witnesses and the production of evidence may be permitted or directed.

21. Formal Hearings

The parties to a formal hearing shall be the Commission, the permittee, applicant, or respondent, as the case may be, and any person permitted to intervene pursuant to Section 15 of this regulation.

22. Limited Appearances by Persons Not Parties

With the consent of the Hearing Officer, limited appearances may be entered without request for or grant of permission to intervene by persons who are not parties to a hearing. With the consent of the Hearing Officer, and on due notice to the parties, such persons may make oral or written statements of their position on the issues involved in the proceeding, but may not otherwise participate in the hearing.

23. Designation of Hearing Officer

Any hearing herein provided for may be conducted by the Commission at a regular or special meeting or may be conducted by a Hearing Officer, selected in rotation from a list of qualified persons maintained by the Executive Secretary, who shall have the power and authority to conduct hearings in the name of the Commission at any time and place.

24. Function of Hearing Officer

It shall be the function of the Hearing Officer to schedule and conduct hearings on behalf and in the name of the Commission on all matters referred for hearing by the Executive Secretary. It is the duty of the Hearing Officer to cause to be prepared and furnished to the Commission for decision a written record of the hearing. The Hearing Officer shall also prepare for the Commission for decision a statement of findings and conclusions upon all material issues of fact and law and shall prepare or cause to be prepared an order recommended to be issued by the Commission in the matter. The record of the hearing shall be a summary of all evidence, pleas, motions and objections of all parties, and rulings by the Hearing Officer unless a request for verbatim transcript is filed with the Commission at least fifteen (15) days prior to the commencement of the hearing. If a verbatim transcript is requested by any party before the hearing, the cost of preparing such verbatim transcript shall be paid by the party requesting it.

25. Notice of Hearing

(1) Whenever a hearing is scheduled, the Commission will give not less than thirty (30) days notice of the hearing to all parties and to other persons, if any, entitled to notice. Such notice shall state the time, place, and nature of the hearing; the legal authority and jurisdiction under which the hearing is to be held; the matters of fact and law asserted to be considered and a request for an answer. The time and place for hearing will be fixed with due regard for the convenience and necessity of the parties or their representatives.

(2) The notice of hearing may be a separate notice or when appropriate may be embodied in the Notice of Violation.

26. Answer

(1) Within the time allowed by the notice of hearing for filing and serving an answer, and as required, the answer of a permittee, applicant, or respondent, shall fully advise the Commission and any other parties as to the nature of the defense or other position of the answering party, the issues he proposes to controvert and those he does not controvert, and whether or not he proposes to appear and present evidence. If facts are alleged the answer shall admit or deny specifically each allegation of fact; or where knowledge is lacking, the answer may so state and the statement shall operate as a denial. Allegations of fact not denied shall be deemed to be admitted. Matters alleged as affirmative defenses or positions shall be separately stated and identified and, in the absence of a reply, shall be deemed to be controverted. The answer of an intervenor shall fully advise the Commission and other parties of his position and whether or not he proposes to appear and present evidence.

(2) If a party does not oppose any order or proposed action of the Commission embodied in or accompanying the notice of hearing or does not wish to appear and give evidence at the hearing, the answer shall so state. In lieu of appearing, the party may if he chooses submit a statement of reasons why the proposed order or sanction should not be issued or should be different than proposed, and the Commission will attribute such weight as it deems deserving to the written reasons.

27. Reply

In appropriate cases the Commission may file and serve a reply to the answer or, if the answer affects other parties to the proceeding, the Commission or the Hearing Officer before whom the matter is to be heard may permit such parties to file and serve a reply.

28. Default

Failure of a party to file and serve an answer within the time provided in the notice of hearing or as prescribed herein or to appear at a hearing, shall be deemed to authorize the Commission in its discretion, as to such party: (a) to find the facts alleged to be true and to enter such finding or order as may be appropriate, without further notice or hearing; or, (b) to proceed to take proof, without further notice, on the allegations or issues set forth in the specification of issues.

29. Admissions

After the answer has been filed, any party may file and serve upon the opposing side a written request for the admission of the genuineness and authenticity of any relevant documents described in or attached to the request or for the admission of the truth of any relevant matters of fact stated in the request. Each matter for which an admission is requested shall be deemed admitted unless within the time designated in the request, but not less than ten (10) days after service thererof or further time as the Commission or Hearing Officer before whom the matter is to be heard may allow upon motion and notice, the party to whom the request is directed serves upon the requesting party a sworn statement either denying the matters upon which the admission is requested or setting up the reasons why he cannot truthfully admit or deny such matters.

30. Public Hearings

All formal hearings shall be public except that evidence relating to processes or production unique to the owner or operator which would tend to affect adversely the competitive position of such owner or operator shall be taken in closed session.

31. Evidence in Formal Hearings

(1) Every party to the hearing shall have the right to present such oral or documentary evidence and rebuttal evidence and conduct such cross-examination as may be required for a full and true disclosure of the facts. The parties shall be encouraged to present evidence in written form.

(2) The Hearing Officer shall exclude all irrelevant, immaterial, or unduly repetitious evidence.

(3) Objections to the admission or exclusion of evidence shall state the grounds of objections. The record shall include the objections, the grounds and the rulings, but not the argument of the grounds unless ordered by the Hearing Officer.

(4) Any offer of proof made in connection with an objection taken to the ruling of the Hearing Officer, excluding or rejecting proffered oral testimony, shall consist of a statement of the substance of the evidence which the party contends would be adduced by such testimony. If the excluded material is documentary or written, a copy of such material shall be marked for identification and shall constitute the offer of proof.

(5) An official record of a governmental agency of an entry in such record, when admissible, may be evidenced by an official publication thereof or by a copy attested as a true copy by the officer having legal custody of the record, or by his deputy, and accompanied by a certificate that such officer has the custody.

32. Briefs

Briefs may be filed within ten (10) days after the close of the hearing provided, however, that the Commission or Hearing Officer having heard the matter may, upon written application, grant an additional period of time not in excess of sixty (60) days within which briefs may be filed.

33. Findings and Order

The Commission in a regular or special meeting shall after reviewing the entire record of the hearing make its findings and enter its order. The findings and order shall be in writing and shall contain a statement of findings and conclusions upon all material issues of fact and law and shall be signed by the Chairman of the Commission. The original thereof shall be filed as a part of the record of the case which shall be retained in the custody of the Secretary unless an appeal is taken therefrom and one certified copy of the findings and order shall be served on all parties to the proceedings.

34. Oral Argument Before the Commission

(1) The Findings, Conclusions, and Recommended Order of the Hearing Officer shall be filed with the Secretary as soon after the conclusion of the hearing as possible. Within three (3) days after the receipt the Secretary shall cause a copy of the Hearing Officer's Findings, Conclusions, and Recommended Order to be served upon each party to the proceeding. Any party may request, either orally or in writing, at the first meeting of the Commission following service of the Hearing Officer's Findings, Conclusions, and Recommended Order that he be allowed to address the Commission prior to the Commission's taking any action on the Hearing Officer's Findings, Conclusions, and Recommended Order served upon him. The Commission upon receiving the request may in its discretion, hear the party at the next meeting, whether regular or special, of the Commission.

(2) Any person who shall be granted permission to address the Commission shall be allowed a reasonable time to speak.

(3) Any statement made to the Commission pursuant to the provisions in this section shall be limited to matters contained in the record of hearing.

35. Waiver of Procedures

The parties to any hearing may agree to waive any one or more of the procedural steps which would otherwise precede the reaching of a final deision by the Commission.

36. Public Records -- Exceptions

Except as provided below all records shall be deemed public records and shall be open to inspection by the public. The following are not to be considered public records which are available for public inspection:

(1) Documents relating to personnel matters and medical and other personnel information, which; under general governmental personnel practices, are not normally made public;

(2) Correspondence received in confidence by the Commission relating to an alleged or possible violation of any statute, rule, regulation, order, license or permit;

(3) Any other document involving matters of internal agency management;

(4) Any other matter required by law to be kept confidential or not available to public inspection;

(5) Any records or memoranda which would divulge methods or processes entitled to protection as trade secrets;

(6) The Commission may withhold any document or part thereof from public inspection if disclosure of its contents is not required in the public interest and would adversely affect the interest of a person concerned. Such withholding from public inspection shall not, however, affect the right of persons properly and directly concerned to inspect the document. Persons requesting that a document or information therein by withheld from public disclosure shall make prompt application identifying the material and giving the reasons. Where the applicant is responsible for the preparation of the document, he shall

insofar as is possible segregate in a separate paper the information for which the special treatment is requested. The Commission may honor the request upon a finding that public inspection is not required in the public interest and would adversely affect the interest of the person concerned. If the request is denied, the applicant will be notifed thereof with a statement of reasons.

REGULATION 1

GENERAL PROVISIONS

REGULATION 1.01 GENERAL APPLICATION OF REGULATIONS AND STANDARDS

SECTION 1.

Regulations of the District shall be construed and applied in light of the considerations set forth hereinafter which shall guide the District in the issuance, modification, and revocation of permits. The provisions of this regulation shall be effective on June 13, 1979.

(a) All other provisions to the contrary notwithstanding, all air contaminant sources shall as a minimum apply such control procedures as are reasonable, available, and practical.

(b) Nothing in these regulations is intended to permit any practice which is in violation of any statute, ordinance, or regulation.

(c) These regulations shall be construed as complementary to each other, and to such other regulations as have been adopted or shall be adopted by the District. If any provision of these regulations or the application thereof to any person or circumstance is held to be invalid, such invalidity shall not affect other provisions or application of any other part of these regulations and to this end each provision of these regulations, and the various applications thereof, are declared to be severable.

REGULATION 1.02 DEFINITIONS

The following terms shall have the meaning given them below except as otherwise specified in these regulations. All terms not defined below shall have the meaning given them elsewhere in these regulations, K.R.S. 77.005, or by commonly accepted usage.

(1) "Affected facility" means a piece of equipment or an operation, to which a regulation is applicable or which emits or may emit air contaminants.

(2) "Air contaminant or air pollutant" includes smoke, dust, soot, grime, carbon or other particulate matter, radioactive matter, noxious acid, fumes, gases, odor, vapor, or any combination thereof.

(3) "Air pollution control equipment" is equipment which may be required by law or regulation for the control of air pollution, but is not vital to production of the normal product of the source or to its normal operation.

(4) "Alternative method" means any method of sampling and analyzing for an air pollutant which is not a reference method or an equivalent method but which has been demonstrated to the satisfaction of the United States Environmental Protection Agency and the District to produce, in specific cases, results adequate for determining compliance.

(5) "Ambient air" means that portion of the atmosphere external to buildings to which the general public has access.

(6) "Ambient air quality standard" means the numerical expression of a goal to be achieved and maintained through the application of appropriate preventive and/or control measures. It consists of two parts:

(i) a specified concentration level for a particular air contaminant, and

(ii) the time averaging interval over which that concentration level is measured.

(7) "Annual mean" means an average determined on the basis of any consecutive 12 month interval.

(8) "Annual potential" means emissions based on the maximum annual rated capacity of the source, unless the source is subject to enforceable permit conditions which limit the operating rate or hours of operation, or both.

(9) "Asbestos" means actinolite, amosite, anthophylite, chrysotile, crocidolite, tremolite.

(10) "Asbestos mill" means any facility engaged in the conversion or any intermediate step in the conversion of asbestos ore into commercial asbestos. Outside storage of asbestos materials is not considered a part of such facility.

(11) "Asbestos material" means asbestos or any material containing asbestos.

(12) "Asbestos tailings" means any solid waste product of asbestos mining or milling operations which contains asbestos.

(13) "Beryllium" means the element beryllium. Where weights or concentrations apply to beryllium only, excluding the weight or concentration of any associated elements.

(14) "Beryllium alloy" means any metal to which beryllium has been added in order to increase its beryllium content and which contains more than 0.1 percent beryllium by weight.

(15) "Beryllium ore" means any naturally occurring material mined or gathered for its beryllium content.

(16) "Beryllium propellant" means any propellant incorporating beryllium.

(17) "Best available control technology" (BACT) means an emission limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation which would be emitted from any proposed major stationary source or major modification which the District (on a case-by-case basis, taking into account energy, environmental and economic impacts and other costs) determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under Regulation 5, 6 or 7.

(18) "Board" means the Air Pollution Control Board of Jefferson County as provided for in K.R.S. Chapter 77.

(19) "Bulk resin" means a resin which is produced by a polymerization process in which no water is used.

(20) "Ceramic plant" means a manufacturing plant producing ceramic items.

(21) "Commence" means that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a binding agreement or a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

(22) "Commercial asbestos" means any variety of asbestos which is produced by extracting asbestos from asbestos ore.

(23) "Compliance schedule" means a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with any limitation or standard.

(24) "Construction" means fabrication, erection, modification or installation of an affected facility or any portion of an affected facility.

(25) "Demolition" means the wrecking or removal of any load-supporting structural member.

(26) "Dispersion resin" means a resin manufactured in such a way as to form fluid dispersions when dispersed in a plasticizer or plasticizer/diluent mixtures.

(27) "Denuder" means a container which is part of a mercury chlor-alkali cell and in which water and alkali metal amalgam are converted to alkali metal hydroxide, mercury, and hydrogen gas in a short-circuited, electrolytic reaction.

(28) "District" means the Jefferson County Air Pollution Control District as provided for in K.R.S. Chapter 77.

(29) "Eight hour average" means an average determined on the basis of any consecutive 8 hour interval.

(30) "Emission standard" means a legally enforceable regulation either setting forth a numerical limit on air contaminants emitted into the ambient air, or prescribing equipment or operating specifications for such control.

(31) "Equivalent method" means any method of sampling and analyzing for an air pollutant which has been demonstrated to the United States Environmental Protection Agency's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

(32) "Ethylene dichloride plant" means any plant which produces ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene.

(33) "Ethylene dichloride purification" means any part of the process of ethylene dichloride production which follows ethylene dichloride formation and in which finished ethylene dichloride is produced.

(34) "Existing affected facility", except as otherwise specified under applicable regulations, means any affected facility which is in being or has commenced construction before the effective date of the applicable emission standard and which has not been subsequently modified or reconstructed;

(35) "Fixed capital cost" means the capital needed to provide all of the depreciable components.

(36) "Fuel" means natural gas, petroleum, coal, wood, and any other form of solid, liquid, or gaseous matter consumed for the purpose of creating useful heat.

(37) "Fugitive soil" means particulate matter composed of soil which is uncontaminated by pollutants resulting from industrial activity. Fugitive soil may include emissions from haul roads, wind erosion of exposed soil surfaces and soil storage piles, and other activities in which soil is either removed, stored, transported or redistributed.

(38) "Hazardous air pollutant" means an air pollutant to which no ambient air quality standard is applicable and which in the judgment of the District may cause, or contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.

(39) "Hearing Board" means the Jefferson County Air Pollution Control Hearing Board as defined in K.R.S. Chapter 77.

(40) "Hydrogen gas stream" means a hydrogen stream formed in the chlor-alkali cell denuder.

(41) "Incineration" means the process of igniting and burning solid, semi-solid, liquid, or gaseous combustible or partially combustible wastes.

(42) "Incinerator" means any furnace used in the process of burning waste for the purpose of reducing the volume of waste by removing combustible matter.

(43) "Latex resin" means a resin which is produced by a polymerization process which initiates from free radical catalyst sites and is sold undried.

(44) "Lowest achievable emission rate" (LAER) means, for any source, that rate of emissions based on the following, whichever is more stringent:

  (i) The most stringent emission limitation which is contained in the implementation plan of any State for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable; or

  (ii) The most stringent emission limitation which is achieved in practice or can reasonably be expected to occur in practice by such class or category of source taking into consideration the pollutant which must be controlled.

The lowest achievable emission rate shall not exceed the amount allowable under applicable new source standards of performance.

(45) "Major modification" means that change as defined in Regulations 2.04 and 2.05, whichever is applicable.

(46) "Major source" means any source which has the potential to emit 100 tons per year or more of particulate matter, sulfur oxides, nitrogen oxides, volatile organic compounds, carbon monoxide, or lead.

(47) "Malfunction" means any sudden, unforeseen, and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner, not including failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or equipment breakdown.

(48) "Mercury" means the element mercury, exlcuding any associated elements, and includes mercury in particulates, vapors, aerosols, and compounds.

(49) "Mercury chlor-alkali cell" means a device which is basically composed of an electrolyzer section and a denuder (decomposer) section and utilizes mercury to produce chlorine gas, hydrogen gas, and alkali metal hydroxide.

(50) "Mercury chlor-alkali electrolyzer" means an electrolytic device which is part of a mercury chloralkali cell and utilizes a flowing mercury cathode to produce chlorine gas and alkali metal amalgam.

(51) "Mercury ore" means a mineral mined specifically for its mercury content.

(52) "Mercury ore processing facility" means a facility processing mercury ore to obtain mercury.

(53) "Modification" means any physical change in, or change in the method of operation of, an affected facility which increases the amount of any air pollutant (to which an emission standard applies) emitted by such facility or which results in the emission of any air pollutant (to which an emission standard applies) not previously emitted, except that:

  (i) Routine maintenance, repair, and replacement shall not be considered physical changes, and

  (ii) A change in the method of operation, unless previously limited by permit conditions, shall not include:

    a. An increase in the production rate, if such increase does not exceed the operating design capacity of the affected facility or of the air pollution control equipment installed on the affected facility;

    b. An increase in the hours of operation when the increase does not result in a violation of any applicable emission standards;

    c. Use of an alternative fuel or raw material if, prior to the date any standard under this regulation becomes applicable to such facility, the affected facility is designed to accommodate such alternative use;

    d. Use of an alternative fuel or raw material by reason of an order, rule, or natural gas curtailment plan as approved by the District;

    e. Change in ownership of the source.

(54) "New affected facility" means any affected facility the construction, modification, or reconstruction of which is commenced on or after the effective date of any applicable regulation.

(55) "Nitrogen oxides" means all oxides of nitrogen except nitrous oxide, as measured by test methods specified by the District;

(56) "Odor" means the property of an air contaminant that can be detected by the sense of smell.

(57) "One week average" means an average determined on the basis of any consecutive 7 day interval.

(58) "Opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

(59) "Open burning" means the burning of any matter in such a manner that the products of combustion resulting from the burning are emitted directly into the ambient air without passing through a stack or chimney.

(60) "Outside air" means the air outside buildings and structures.

(61) "Owner or Operator" means any person who owns, leases, operates, controls or supervises one or more affected facilities.

(62) "Particulate asbestos material" means finely divided particles of asbestos material.

(63) "Particulate matter" means any material, except uncombined water, which exists in a finely divided form as a liquid or a solid.

(64) "Person or Persons" means any individual, public or private corporation, political subdivision, government agency, municipality, industry, co-partnership association, firm, trust, estate, or other entity whatsoever.

(65) "Polyvinyl chloride plant" means any plant where vinyl chloride alone or in combination with other materials is polymerized.

(66) "Potential to emit" means the capability of an affected facility operating at maximum capacity to emit a pollutant in absence of air pollution control equipment unless the source is subject to enforceable permit conditions which limit the operating rate or hours of operation, or both.

(67) "Propellant" means a fuel and oxidizer physically or chemically combined which undergoes combustion to provide rocket propulsion.

(68) "Propellant plant" means any facility engaged in the mixing, casting, or machining of propellants.

(69) "Reconstruction" means that the fixed capital cost of the new components of the affected facility exceeds 50 percent of the fixed capital cost of a comparable entirely new facility or source, based on the estimated life of the facility after replacements compared to an entirely new facility and the extent to which the new components contribute to the emissions.

(70) "Reactor" means any vessel in which vinyl chloride is partially or totally polymerized into polyvinyl chloride.

(71) "Reference Method" means any method of sampling and analyzing for an air pollutant as prescribed in the following United States Environmental Protection Agency Regulations: Standards of Performance for New Stationary Sources (40 CFR 60); Standards of Performance for Hazardous Pollutants (40 CFR 61); and National Primary and Secondary Ambient Air Quality Standards (40 CFR 50).

(72) "Regulation" means a rule or principle adopted by the Air Pollution Control Board pursuant to K.R.S. Chapter 77 for the control or abatement of air contaminants within its jurisdiction or for the administration of the Air Pollution Control District.

(73) "Run" means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

(74) "Sludge" means solid or semi-solid material produced by a treatment plant that processes municipal or industrial waste waters.

(75) "Sludge dryer" means a device used to reduce the moisture content of a sludge by heating to temperatures above 65° C directly with combustion gases.

(76) "Source" means one or more affected facilities contained within a given contiguous property line. The property shall be considered contiguous if separated only by a public thoroughfare, stream, or other right of way.

(77) "Stack or Chimney" means any flue, conduit, or duct arranged to conduct emissions to the atmosphere.

(78) "Standard conditions":

  (i) For source measurements means 20 degrees Celsius and a pressure of 760 mm Hg;

  (ii) For the purpose of air quality determinations means 25 degrees Celsius and a reference pressure of 760 mm Hg.

(79) "Standard operating procedure" means a formal written procedure officially adopted by the plant owner or operator and available on a routine basis to those persons responsible for carrying out the procedure.

(80) "Startup" means the setting in operation of an affected facility for any purpose.

(81) "Three month average" means an average determined on the basis of any consecutive 3 month interval.

(82) "Twelve hour average" means an average determined on the basis of any consecutive 12 hour interval.

(83) "Twenty-four hour average" means an average determined on the basis of any consecutive 24 hour interval.

(84) "Uncombined water" means water that is either in a gaseous, liquid or solid state and which is not bound to a compound by internal molecular forces.

(85) "Vinyl chloride plant" means any plant which produces vinyl chloride by any process.

(86) "Vinyl chloride purification" means any part of the process of vinyl chloride production which follows vinyl chloride formation and in which finished vinyl chloride is produced.

(87) "Visible emission" means an emission of greater than 5% opacity.

(88) "Volatile organic compound" (VOC) means chemical compounds of carbon excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate which have a vapor pressure greater than 0.1 mm Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(89) "Year" means a calendar year.

REGULATION 1.03 ABBREVIATIONS

The abbreviations used in these regulations have the following meanings:

ASTM - American Society for Testing & Materials
BACT - Best Available Control Technology
BTU - British Thermal Unit
C - degree Celsius (centigrade)
Cal - calorie
Cfm - cubic feet per minute
CFR - Code of Federal Regulations
CH_4 - methane
CO - carbon monoxide
CO_2 - carbon dioxide
dscf - dry cubic feet at standard conditions
N_2 - nitrogen
NAAQS - National Ambient Air Quality Standards
NO - nitric oxide
NO_2 - nitrogen dioxide
NO_x - nitrogen oxides
oz - ounce
O_2 - oxygen
O_3 - ozone
ppb - parts per billion
ppm - parts per million
(w/w) - parts per million (weight by weight)
PSD - Prevention of Significant Deterioration
ug - microgram
psia - pounds per square inch absolute
RACT - Reasonably Available Control Technology
sec - second
SO_2 - sulfur dioxide
sq - square
yd - yard
dscm - dry cubic meter at standard conditions
F - degree Fahrenheit
ft - feet
g - gram(s)
gal - gallon(s)
gr - grain(s)
hr - hour(s)

HCl - hydrochloric acid
Hg - mercury
HF - hydrogen fluoride
H_2O - water
H_2S - hydrogen sulfide
H_2SO_4 - sulfuric acid
in - inch(es)
k - 1,000
kg - kilogram(s)
LAER - Lowest Achievable Emission Rate
l - liter(s)
LF - linear feet
lb - pound(s)
m - meter(s)
min - minute(s)
mg - milligram(s)
MM - million
mm - millimeter(s)
mo - month

REGULATION 1.04 PERFORMANCE TESTS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to any affected facility as defined in Regulation 1.02.

SECTION 2. TEST REQUIREMENTS

(a) The District may require, for cause, the owner or operator of any affected facility to sample emissions in accordance with such methods as the District shall prescribe. All tests shall be made under the direction of persons qualified by training and/or experience in the field of air pollution control.

(b) The District may conduct tests of emissions of air contaminants from any source.

(c) Performance tests required by any regulation of the Air Pollution Control District shall be conducted and data reduced in accordance with the methods and procedures specified by the District.

  (i) The District may waive the requirement for performance tests if, in the case of an existing affected facility, the owner or operator proves to the District's satisfaction that the test cannot be performed due to physical plant limitations or extreme economic burden.

  (ii) If the affected facility is subject to a standard of performance promulgated under 40 CFR 60 or 40 CFR 61 such procedures shall be used unless:

    a. the U. S. Environmental Agency and the District specify or or approve the use of a reference method with minor changes in methodology.

    b. the U. S. Environmental Protection Agency and the District approve the use of an equivalent method.

    c. the U. S. Environmental Protection Agency and the District approve the use of an alternative method, the results of which it has determined to be adequate for indicating whether a specific source is in compliance, or

    d. the U. S. Environmental Protection Agency and the District waive the requirement for performance test for affected facilities for which a standard of performance has been promulgated under 40 CFR 60 or 50 CFR 61 because the owner or operator of such affected facility has demonstrated to the Agency's satisfaction that the affected facility is in compliance with the applicable standard.

    e. Agreements with the facility's owner or operator to modify any test procedures from the Reference Methods of 40 CFR Part 60 Appendix A, shall be documented in writing.

(d) The owner or operator shall permit the District to conduct performance tests at any reasonable time, shall cause the affected facility to be operated for purposes of such tests under such conditions as the District may specify based on representative performance of the affected facility, and shall make available to the District such records as may be necessary to determine such performance.

(e) The owner or operator of an affected facility shall provide the District 10 working days prior notice of the performance test to afford the District the opportunity to have an observer present.

(f) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(i) Sampling ports adequate for test methods applicable to such facility.

(ii) Safe sampling platform(s).

(iii) Safe access to sampling platform(s).

(iv) Utilities for sampling and testing equipment.

(g) Each performance test shall consist of separate runs using the applicable test method. Each run shall be conducted for such time and under such conditions specified in the applicable regulation. For the purpose of determining compliance with an applicable standard, the arithmetic mean of 3 runs shall apply. The arithmetic mean shall be determined carrying all significant digits in data and calculations to the final emission rate calculation. The final emission rate shall then be determined by rounding off to the last significant digit of the applicable standard; i.e., dropping the following digit if it is 4 or less, or adding 1 to the last significant digit if the following digit is 5 or greater. In the event that a sample is accidentally lost or conditions occur in which one of the 3 runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the District's approval, be determined using the arithmetic mean of the results of the 2 other runs.

SECTION 3. PRE-TEST SURVEY AND CONFERENCE

(a) A pre-test survey and conference shall be arranged at least 20 days in advance of the projected starting date for any performance test. This meeting shall be arranged by District personnel after receiving the owner's notification of the "intent to test" his facility. Prior to the meeting, available information on the facility shall be submitted and reviewed to focus attention on those areas which might jeopardize a successful test.

(b) The conference shall include a representative from the facility, the test team leader, and the District's selected observer for the proposed test.

REGULATION 1.05 COMPLIANCE WITH EMISSION STANDARDS AND MAINTENANCE REQUIREMENTS

SECTION 1.

Compliance with emission standards in these regulations, other than opacity standards, shall be determined by performance tests required by Regulations 5, 6 or 7.

SECTION 2.

For affected facilities not required to conduct performance tests pursuant to these regulations, compliance with emission standards, other than opacity standards, shall be determined by engineering calculations based upon data obtained by District personnel.

SECTION 3.

Compliance with opacity standards in this regulation shall be determined by conducting observations in accordance with the reference method as defined in Regulation 1.02 (71). Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with opacity standards. The results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission. The owner or operator shall meet the burden of proving that the instrument used (at the time of the alleged violation) meets performance specification as required by the District, has been properly maintained and calibrated, and that the resulting data have not been tampered with in any way.

SECTION 4.

The opacity standards set forth in these regulations shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard.

SECTION 5.

At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the District which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspections of the source.

REGULATION 1.06 SOURCE SELF-MONITORING AND REPORTING

SECTION 1. IN STACK SELF-MONITORING & REPORTING

The District may require the owner or operator of any affected facility to install, use, and maintain stack gas measuring and/or emission monitoring equipment in accordance with such requirements as specified in these regulations. The owner or operator shall maintain records of monitoring data and make periodic reports of such data in such form, units, and at such intervals which the District shall prescribe. Requirements for specific affected facilities are contained in the applicable regulations.

SECTION 2. AMBIENT AIR MONITORING

The District may require the owner or operator of any affected facility for which a standard is prescribed to install, use, and maintain ambient air monitoring equipment in accordance with methods prescribed by the District and/or the Environmental Protection Agency, and in such number and frequency as prescribed by the District, and to make periodic ambient air monitoring reports at intervals as prescribed by the District.

REGULATION 1.07 EMISSIONS DURING SHUTDOWN AND MALFUNCTION

SECTION 1. EXCESS EMISSIONS

Emissions due to shutdown or malfunction, which temporarily exceed the standard set forth by the District, shall be deemed in violation of such standards unless the requirements of this regulation are satisfied and the determinations specified in section 3 (a) of this regulation are made.

SECTION 2. PLANNED SHUTDOWN

When emissions during any planned shutdown and ensuing startup exceed the standards, the owner or operator of the affected facility shall notify the District in writing no later than 3 days before the planned shutdown. However, if the shutdown is necessitated by events which the owner or operator could not reasonably have foreseen 3 days before the shutdown, then such notification shall be given as promptly as possible following the determination to shut down and in no event later than one day following the determination to shut down. If the emissions exceed the standard for a period in excess of 4 hours, the owner or operator of the affected facility shall send written notice to the District no later than the end of the next working day following the fourth hour of excess emissions.

SECTION 3. MALFUNCTION

When emissions due to malfunction (or to unforeseen shutdown associated with malfunction) are or may be in excess of the standards, the owner or operator of the affected facility shall as promptly as possible and in no event later than one hour following the start and termination of the malfunction, notify the District by telephone.

(a) Nothing in this section shall relieve a source from compliance with the standards set forth by the District unless the District determines that:

  (i) The occurrence in question did not result from the failure of the owner or operator of the source to operate and maintain the equipment properly;

  (ii) All reasonable steps were taken to correct, as expeditiously as practicable, the conditions causing the emissions to exceed the standards, including the use of off-shift labor and overtime if necessary; and

  (iii) All reasonable steps were taken to minimize the emissions resulting from the occurrence.

(b) In cases where malfunctions are of a repetitious nature, or when more than 12 failures of the same or similar pieces of equipment occur in a twelve month period, the District shall require the owner or operator to submit a written program outlining a time schedule and corrective actions which will result in a permanent solution to the problems.

The District reserves the right to continually evaluate and require corrections of malfunctions.

(c) Nothing in this section shall be construed to restrict the District's discretion to take, at any time, appropriate enforcement action under K.R.S. 77, if upon information supplied to the District pursuant to this regulation, or otherwise available to the District, the District determines that such action is necessary to protect public health or welfare.

SECTION 4. EXTENDED MALFUNCTIONS

(a) If the time necessary to correct unlawful emissions will exceed 4 hours, but not exceed 30 days, the owner or operator must notify the District of the malfunction by telephone at the time of occurrence, and in writing no later than one working day subsequent to the end of the malfunction. The Air Pollution Control Officer may authorize continued operation and impose conditions for continued operation. Notification of completion of corrective actions must still be made by telephone to the District.

(b) If the time necessary to correct the unlawful emissions is anticipated to exceed 30 days, then the owner or operator shall initiate the variance procedure pursuant to Regulation 1.08, section 4.

SECTION 5. REPORTING REQUIREMENTS

(a) Malfunction reports and shutdown notices shall include the following information:

  (i) The name of the air contaminant source and affected facility;

  (ii) Its location;

  (iii) The address and telephone number of the person responsible for the source;

  (iv) The date and time for the event;

  (v) The physical and chemical composition, rate, and concentration of the emissions during shutdown and startup, or during the malfunction;

  (vi) The measures adopted to minimize the duration and extent of the emissions during shutdown, startup, or malfunction.

(b) Shutdown notices shall include the following additional information:

  (i) The reasons for and duration of the shutdown;

  (ii) The nature of the action to be taken during shutdown;

  (iii) The date and time for the action;

  (iv) The basis for determination that such shutdown is necessary.

(c) Malfunction reports shall also include:

  (i) The time the excess emissions began and ended;

(ii) The time of the beginning and end of the breakdown or malfunction which is asserted to be the cause of the excess emissions;

(iii) An explanation and, where appropriate, an engineering analysis of the cause of the malfunction or breakdown;

(iv) An analysis of the steps that will be taken to prevent or minimize similar occurrences in the future; and

(v) Such additional information as the District may require.

(d) The District may, for good cause, waive or extend the time periods for the filing the report required by this subsection.

REGULATION 1.08 ADMINISTRATIVE PROCEDURES

SECTION 1. PUBLIC HEARINGS

(a) A public hearing shall be held by the Air Pollution Conrol Board:

(i) Before issuance of a compliance plan and schedule to any source.

(ii) When a source appeals the denial of a permit to operate an air contaminant source by the Air Pollution Control Officer.

(iii) When an aggrieved party appeals the issuance of a permit to operate an air contaminant source by the Air Pollution Control Officer.

(iv) Before adoption of any revision to the regulations of the Air Pollution Control District.

(v) Subsequent to completing review of a new source subject to Regulation 2.05 at the discretion of the Board.

SECTION 2. COMPLIANCE PLANS AND SCHEDULES

(a) No person shall use, operate, or maintain an affected facility resulting in the presence of air contaminants in the atmosphere in contravention of any regulation unless an approved compliance schedule has been issued by the District and is currently in effect or a variance has been obtained from the Hearing Board pursuant to section 4 of this regulation.

(b) Application for compliance schedules required under this section shall contain:

(i) the reason for requesting a compliance schedule

(ii) a schedule and timetable for compliance

(iii) the level of emissions expected during the period prior to compliance.

(iv) a plan for emission monitoring and monthly reporting

(v) facts establishing that the proposed system is the best practical system of emission reduction

(vi) such information as the District shall deem necessary to determine whether the compliance schedule should be issued.

(c) Applications for compliance schedules shall be signed by the corporate president or his authorized agent; or by an equivalently responsible officer in the case of organizations other than corporations; or, in other cases, by the source owner or operator; or, in the case of political subdivisions, elected officials. Such signature shall constitute personal affirmation that the statements made in the application are true and complete.

(d) The information submitted in the application shall, when specifically requested by the District, include an analysis of the characteristics, properties, and volume of the air contaminants based upon samples of air contaminants taken under maximum operating conditions. Failure to supply information required or deemed necessary by the District to enable it to act upon the compliance schedule application shall result in disapproval of the compliance schedule.

(e) If, for any reason, the District and the owner of the affected facility are unable to negotiate a mutually acceptable schedule, the District will propose a compliance schedule to the Board. After a public hearing the Board will issue a compliance plan and schedule incorporating the most expeditious and practicable schedule for bringing the affected facility into compliance. Once issued, a compliance schedule, including all increments of progress, shall be legally enforceable.

(f) Compliance schedules issued hereunder shall be subject to such terms and conditions set forth and embodied in the compliance schedule as the District shall deem necessary to insure compliance with its standards. Such terms and conditions may include maintenance and availability of records relating to operations which may cause or contribute to air pollution including periodic sampling of the affected facilities.

(g) Acceptance of a compliance schedule conditioned as described herein shall denote agreement to the restrictions embodied in the compliance schedule and shall thenceforth be binding upon the holder of the permit or compliance schedule.

(h) Timeliness

(i) An application for a compliance schedule shall be submitted to the District 40 days prior to the proposed hearing date, unless the District finds: (1) that the late request was beyond the control of the applicant, and (2) the failure to hold the hearing as requested may result in significant impairment or disruption of the applicant's business.

SECTION 3. PROCEDURES AT PUBLIC HEARINGS

Public hearings of the District as required by state and federal laws and regulations shall be held on the same day of the month as the Board meeting, unless the Board votes to set another date for a particular hearing. At any public hearing:

(a) The petitioner shall first be given the opportunity to present any testimony to the District regarding the proposal;

(b) The staff opinion will then be read by a representative of the District;

(c) Any person who wishes to present evidence in opposition to the application may then testify;

(d) The petitioner shall then be given an opportunity to rebut any of the opposition testimony;

(e) Further opportunity for comment may be granted at the discretion of the Chairperson.

At the conclusion of the testimony, the public hearing shall be adjourned. The Board shall place the matter of the public hearing on the agenda of its next meeting for appropriate action.

SECTION 4. VARIANCE PROCEDURES

(a) Variances shall be obtained in accordance with the procedure specified in K.R.S. 77.225-77.230 and 77.245-77.270.

(b) Any person requesting a variance shall file an application for a variance with the Air Pollution Control Officer and pay the amount of $100.00 to the Air Pollution Control District of Jefferson County to cover the cost.

(c) In addition to the fee set forth in section 4 (b) above of this section, any person filing an application shall bear the cost of a certified court recorder to prepare one original transcript and four copies of the original transcript. Two copies shall be the property of the Hearing Board; one copy shall be the property of the person who filed the application, and the fourth copy shall be retained by the District.

(d) A request for a variance shall contain the following information:

(i) the regulation from which the source is seeking a variance;

(ii) the reasons for the variance request;

(iii) facts that establish the source's entitlement to a variance in accordance with the criteria listed in K.R.S. 77.260;

(iv) the length of time for which the variance is being requested;

(v) the amount and types of pollutants that will be emitted during the during the variance period;

(vi) any other information deemed necessary by the District.

(e) All public hearings of the Hearing Board shall follow the procedures outlined in section 3 of this regulation. All hearings under this section shall be held at the direction of the Hearing Board and with at least 10 days public notice.

SECTION 5. ENFORCEMENT ORDERS

(a) An enforcement order shall be issued to any source which has been granted a compliance schedule pursuant to this regulation. Said order shall contain the conditions imposed upon the source by the Board. Failure of the source to comply with any condition or other provision of the order may result in an immediate enforcement action by the Board through either an enforcement order of the Board or through appropriate judicial action.

(b) The Board may issue an order to prevent or abate a violation of its regulations by any person. Any aggrieved party may appeal such an order to the Circuit Court.

SECTION 6. NONCOMPLIANCE PENALTIES

When a source fails to comply with the statutory attainment date established by § 113 of the Clean Air Act, said source shall be subject to noncompliance penalties for the period during which it violates any emission standard. The noncompliance penalty shall be equal to the economic value which the delay in compliance may have for the owner of such source. Said penalty shall be calculated pursuant to § 120 of the Clean Air Act or any regulations which have been adopted pursuant to said section.

SECTION 7. CONFIDENTIALITY AND OPEN RECORDS POLICY

(a) Definitions

(i) "Public records" means all books, papers, maps, photographs, cards, tapes, disc, recordings, or other documentary materials regardless of physical form or characteristics, which are prepared, owned, used, in the possession of, or retained by a public agency. "Public records" shall not include any records owned by a private person or corporation that are not related to functions, activities, programs or operations funded by state or local authority.

(ii) "Emission data" means measured or calculated concentrations or weights of air contaminants emitted into the ambient air. Data used to calculate emission data are not emission data.

(b) General Rule

The District shall permit free and open examination of public records by any person with the least possible delay and expense.

(c) Exemptions

The following public records are exceptions to the general rule and shall be subject to inspection only under order of a court of competent jurisdiction. The exemptions shall be strictly construed even though the examination of records not included in the exemptions may cause inconvenience or embarrassment to the District or others.

(i) Public records containing information of a personal nature where public disclosure thereof would constitute a clearly unwarranted invasion of personal privacy.

(ii) Records confidentially disclosed to the District and compiled and maintained in conjunction with one or more of the following: scientific research; an application for a loan; the regulation of a commercial enterprise including mineral exploration records, unpatented, secret, commercially valuable plans, appliances, formulae, or processes which are used for the making, preparing, compounding, treating, or processing of articles or materials which are trade commodities, when the records are acknowledged by both the agency and the enterprise as confidential; or, the grant or review of a license to do business if open disclosure would permit an unfair advantage to competitors of the subject enterprise. This exemption shall not apply to emission data or to other records the disclosure or publication of which is directed by other statute.

(iii) Public records pertaining to a prospective location of a business or industry where no previous public disclosure has been made of the business's or industry's interest in locating in, relocating in, or expanding within the state. This exemption shall not include those records pertaining to applications for permits or licenses necessary to do business or to expand business operations within the state unless the applications contain trade secrets.

(iv) The contents of real estate appraisals, engineering or feasibility estimates, and evaluations made by or for a public agency relative to acquisition of property as acquired.

(v) Test questions, scoring keys, and other examination data used to administer an examination before the exam is given or if it is to be given again.

(vi) Public records compiled in process of detecting and investigating statutory or regulatory violations if the disclosure of the information would harm the agency by revealing the identity of informants not otherwise known or by premature release of information to be used in a prospective law enforcement action or administrative adjudication. These records shall be open after enforcement action is completed or a decision is made to take no action.

(vii) Preliminary drafts, notes or correspondence with individuals, other than correspondence which is intended to give notice of final action of a public agency.

(viii) Preliminary recommendations and preliminary memoranda in which opinions are expressed or policies formulated or recommended.

(ix) All public records or information the disclosure of which is prohibited by federal law or regulation or enactment of the general assembly.

(d) The exemption shall not apply to:

(i) Statistical information which is not descriptive of any readily identifiable person.

(ii) Sharing information between public agencies when the exchange is serving a legitimate governmental need or is necessary in the performance of a legitimate government function.

(iii) The disclosure of a public record to any person, upon presentation of appropriate identification, if the public record relates to the person or mentions the person by name.

(e) Obtaining an Exemption

(i) All public records shall be available for inspection by the public unless the records or portions of the records are clearly marked as confidential. Confidential records may be designated only after the individual or company furnishing the records has requested in writing an exemption from the open records policy and the request has been approved by the District. The request shall include a statement of the specific exemption which would authorize the District to withhold the record and a brief explanation of how the exemption applies to the record. The burden of showing the applicability of the exemption rests with the person requesting the exemption.

(ii) The staff attorney and at least one section supervisor shall review all requests for exemptions and recommend to the Secretary-Treasurer that the exemption be either granted or denied. The Secretary-Treasurer shall notify the person requesting the exemption in writing of his decision concerning the confidentiality of the public record. The decision of the Secretary-Treasurer may be appealed to the Air Pollution Control Board.

(f) Separation of Exempt and Non-Exempt Materials

(i) All exempt materials shallbe attached to the left side of the appropriate file folder. If an entire public record is exempt from disclosure, the complete record and the request for the exception shall be attached to the left side of the file folder. A memo noting the general subject matter of the exempt material should be attached to the right side of the file folder.

(ii) If only a portion of a public record is exempt, a copy shall be made with the exempt portion blocked out. The copy shall be attached to the right side of the file folder, and the original record and the request for the exemption shall be attached to the left side.

(g) Requests to Inspect Public Records

(i) All requests to inspect public records shall be in writing and shall describe the general subject matter of the records with sufficient specificity to enable the District to identify and locate the information sought.

(ii) Within three working days after the receipt of a request, the District shall notify the individual or company furnishing the record that the request has been made, and the District shall determine whether to comply with the request and shall give written notice of that determination to the person making the request.

(iii) If the request is granted, all confidential material shall be removed from the file folder, and the non-exempt section of the record shall be made available for inspection. If, however, the record is in active use, in storage, or not otherwise available, the Secretary-Treasurer shall immediately so notify the applicant and shall designate a place, time, and date for inspection of the public record. If the record will not be available for inspection within three days from receipt of the application, the time, place, and earliest date on which the record will be available for inspection and a detailed explanation of the cause of the delay shall be given in the notice.

(iv) If the request is denied, in whole or in part, the Secretary-Treasurer shall send a written notice stating the reason or reasons for the denial to the person making the request.

(v) A request may be denied for one or more of the following reasons:

a. The records cannot be identified from the information given in the request;

b. The records do not exist;

c. The records are not in the custody of the District;

d. The records are exempt from disclosure; or

e. The request places an unreasonable burden on the agency in producing voluminous public records or the Secretary-Treasurer has reason to believe that repeated requests are intended to disrupt other essential functions of the agency. Refusal under this section must be sustained by clear and convincing evidence.

(vi) If the request is denied because the public records are exempt from disclosure, the notice of denial shall include a statement of the specific exception authorizing the withholding of the record and a brief explanation of how the exception applies to the record withheld.

A copy of the written denial shall be forwarded to the Attorney General. If the request is denied because the material is exempt from disclosure, a copy of the written denial shall also be sent to the person requesting the exemption.

(h) Inspection

(i) Public records may be inspected in the District's offices on the third floor of the Spencerian Office Plaza, 914 East Broadway, Louisville, Kentucky 40204, between the hours of 8:30 A.M. and 4:30 P.M. Monday through Friday. Suitable facilities shall be made available by the District for the inspection.

(ii) No person shall remove the District's copy of any public records from the District's offices without the written permission of the Secretary-Treasurer.

(iii) The District will provide copies of public records at a cost of 10¢ per page.

(iv) The Secretary-Treasurer shall serve as the official custodian of the public records of the Air Pollution Control District of Jefferson County. All requests to inspect agency records should be addressed to the Secretary-Treasurer at the District's offices.

REGULATION 1.09 PROHIBITION OF AIR POLLUTION

No person shall permit or cause air pollution as defined in Regulation 1.02 (a).

REGULATION 1.10 CIRCUMVENTION

No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which would otherwise violate these regulations.

REGULATION 2

PERMIT REQUIREMENTS

REGULATION 2.01. GENERAL APPLICATION

This regulation establishes requirements for obtaining permits for the operation, construction or modification of all new, existing or modified sources of air pollution in Jefferson County, Kentucky. The provisions of this regulation shall be effective on June 13, 1979. Except for those sources listed in Regulation 2.02, the District will conduct a review of permit applications for new or modified sources as set forth in Regulations 2.04 and 2.05 and all other sources as set forth in Regulation 2.06

An outline of permit review procedure is given in Table 1.

TABLE 1
PERMIT REVIEW PROCEDURE OUTLINE

		Attainment Area		Non-Attainment Area	
	Size	Review	Emission Std.[1]	Review	Emission Std.[1]
1.	New/Modified				
	a. Greater than 250 TPY potential	PSD	BACT	Offset	LAER
	b. 100 TPY to 250 TPY potential			Offset	LAER
	c. Selected sources greater than 100 TPY potential	PSD	BACT	Offset	LAER
	d. Less than 100 TPY potential	SIP	New Source Performance Standards	SIP	New Source Performance Standards
2.	Existing	SIP	Existing Source Performance Standards	SIP	Existing Source Performance Standards

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[1] Applicable standard is determined by permit review

REGULATION 2.02. REGISTRATION AND MINOR SOURCE EXEMPTIONS

SECTION 1. REGISTRATION AND REPORTING

(a) Persons engaged in the operation of air contaminant sources shall register such sources or discharges which may result from their operation in accordance with provisions of this regulation.

(b) The District may require from such persons reports containing information relating to said sources and air contaminants emitted by each into the atmosphere.

(c) Registration and reporting of air contaminant sources and their related discharges shall be upon forms provided by the District.

REGULATION 2.03. PERMIT REQUIREMENTS - GENERAL

SECTION 1. PERMITS TO CONSTRUCT OR OPERATE

(a) No person shall construct, reconstruct or modify an affected facility unless a permit to construct has been issued by the District, except as provided in the exemptions under Regulation 2.02.

(b) No person shall use, operate, or maintain for a period in excess of 180 days, any affected facility which is in compliance with all emission limiting regulations unless a permit to operate the affected facility has been issued by the District and is currently in effect, except as provided in the exemptions under Regulation 2.02.

SECTION 2. PERMIT APPLICATION

(a) Applications for permits required under section 1 of this regulation shall be made on forms prepared by the District for such purpose and shall contain such information as the District shall deem necessary for issuance of the permit.

(b) Applications for permits shall be signed by the corporate president or his authorized agent; or by an equivalently responsible officer in the case of organizations other than corporations; or, in other cases, by the source owner or operator; or, in the case of political subdivisions, by the highest elected official of such subdivision. Such signature shall constitute personal affirmation that the statements made in the application are true and complete.

(c) The information submitted in the application shall, when specifically requested by the District, include an analysis of the characteristics, properties, and volume of the air contaminants taken under maximum operating conditions. Failure to supply information required or deemed necessary by the District to enable it to act upon the permit application shall result in denial of the permit.

(d) An application for a permit may include one or more affected facilities provided that all are contained within a source, A person may apply for an amended permit to include new affected facilities provided that such new facilities are within the same source.

SECTION 3. PERMIT REVIEW

(a) After receipt of the permit application, the District shall determine if emission standards and ambient standards are met. As provided in Regulations 2.04, 2.05, and 2.06, no permit shall be issued where it can be shown either through diffusion calculations or actual ambient air quality monitoring, performed according to methods prescribed by the District, that the affected facility will prevent or interfere with the attainment or maintenance of local, state, or federal air quality standards. In cases where no emission standards have been prescribed by regulation, the District shall require the use of all available, practical, and reasonable methods to prevent and control air pollution.

(b) In the event any person or persons allege themselves to be adversely affected by a proposed or existing affected facility or other physical conditions, the Board shall afford such persons a hearing to determine whether a new permit to construct or to operate should be issued or denied, or whether the Board should request the hearing board to hold a public hearing to determine whether an existing permit should be revoked.

SECTION 4. EMISSION DENSITY PROVISION

(a) The District shall not issue a permit for the construction or modification of an affected facility in an area having a radius of one mile and centered on the affected facility to be constructed or modified when:

(i) The sum of particulate emissions from all sources emitting 25 tons per year or more within the area, including the applicant, exceeds or would exceed 4,000 tons per year.

(ii) The sum of sulfur dioxide emissions from all sources emitting 25 tons per year or more within the area, including the applicant, exceeds or would exceed 8,000 tons per year.

(b) In those areas within which the densities cited in (i) or (ii) above have been exceeded prior to the adoption of this regulation, the Air Pollution Control Board shall not issue a permit for the construction of any new affected facility unless the applicant can demonstrate through diffusion calculations thatthe affected facility will not prevent or interfere with the attainment or maintenance of the applicable particulate and sulfur dioxide ambient air quality standards.

(c) In applying the provisions of this regulation, the Board shall give due consideration to the reductions of other sources within the affected area programmed in accordance with the provisions of section 3 (1) of these regulations.

SECTION 5. PERMIT CONDITIONS

(a) Permits issued hereunder shall be subject to such terms and conditions set forth and embodied in the permit as the District shall deem necessary to insure compliance with its standards. Such terms and conditions may include maintenance and availability of records relating to operations which may cause or contribute to air pollution including periodic sampling of the affected facilities.

(b) Acceptance of a permit conditioned as described herein shall denote agreeement to the restrictions embodied in the permit and shall thenceforth be binding upon the holder of the permit or compliance schedule.

SECTION 6. GENERAL PERMIT CONDITIONS

(a) Any owner or operator who constructs or operates a source or modification not in accordance with the application submitted pursuant to this section or with the terms of any approval to construct or operate, or any owner or operator of a source or modification subject to this section who commences construction after the effective date of these regulations without applying for and receiving approval hereunder, shall be subject to appropriate enforcement action as provided under KRS 77.990.

(b) Approval to construct shall become invalid if construction is not commenced within 12 months after receipt of such approval, if construction is discontinued for a period of 6 months or more, of if construction is not completed within a reasonable time. The District may extend the time periods upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between construction of the approved phases of a phased construction project; each phase must commence construction within 12 months of the projected and approved commencement date.

(c) Approval to construct or operate shall not relieve any owner or operator of the responsibility to comply fully with applicable provisions of the requirements of the District and any other requirements under local, state, or federal law.

SECTION 7. RELOCATED SOURCES

(a) If a source located in Jefferson County is relocated involving a change of address, the owner or operator shall obtain new permits for the source. Any existing affected facilities which are not modified or reconstructed (as defined in Regulation 1.02) will continue to be treated as existing affected facilities except as specified below.

(b) If the sum of the relocated affected facilities at the new location is of sufficient size to qualify as a major source under Regulation 2.04 or 2.05, then all the relocated affected facilities shall be treated as new affected facilities for the purpose of those sections.

(c) Any source which relocates from outside Jefferson County shall be treated as a new source.

SECTION 8. RECONSTRUCTED SOURCES

A reconstructed source will be treated as a new source (unless (53) (b) (iv) of Regulation 1.02 applies). However, any economic or technical limitations will be taken into account in assessing whether the emission standards (including BACT or LAER) for a new source are applicable.

REGULATION 2.04. CONSTRUCTION OR MODIFICATION OF MAJOR SOURCES IMPACTING UPON NON-ATTAINMENT AREAS (EMISSION OFFSET REQUIREMENTS)

SECTION 1. APPLICABILITY

This section applies to the construction or reconstruction of major sources or the major modification of existing sources on or after the effective date of this regulation which cause or contribute to a violation of any air quality standard contained in Regulation 3 within a non-attainment area or areas otherwise shown to be exceeding the applicable ambient standards.

SECTION 2. DEFINITIONS

For the purpose of this section:

(a) "Major modification" means any physical change in the method of operation, or an addition to a stationary source which increases the potential emission rate of any air pollutant by 100 tons per year or more. The increase in potential emission rate shall include all accumulated increases occurring at the source since the date of adoption of this regulation, or since the time of the last construction approval issued for the source under this regulation, whichever time is more recent, and regardless of any emission reductions achieved elsewhere by the source.

(i) A physical change shall not include routine maintenance, repair, and replacement of component parts.

(ii) A change in the method of operation, unless limited by previous permit conditions, shall not include:

a. An increase in the production rate, if such increase does not exceed the operating design capacity of the source;

b. An increase in the hours of operation;

c. Use of an alternate fuel or raw material, if on December 21, 1976, the source was capable of accomodating such fuel or material;

d. Use of an alternative fuel or raw material by reason of an order, rule or natural gas curtailment plan approved by the District;

e. Change in ownership of a source.

(b) "Reasonable further progress" means the annual incremental reductions in emissions of the applicable air pollutant which is sufficient in the judgement of the District and the U. S. Environmental Protection Agency to provide for attainment of the primary and secondary ambient air quality standards by December 31, 1982, in non-attainment areas with respect to the pollutant for which the area is non-attainment. The above date shall be extended to December 31, 1987 for ozone and carbon monoxide for those areas granted such an extension by the U. S. Environmental Protection Agency.

(c) "Banked emissions" are those emission reductions which exceed the reasonable further progress requirement of section 6 (h) and have been identified by the District in an enforceable permit.

(d) "Source" means a new major source or any source which is undergoing a major modification.

The meaning of all other terms shall be the definition of the term as given in Regulation 1.02.

SECTION 3. DETERMINATION OF APPLICABLE REQUIREMENTS

(a) The District will review all proposed new major sources and proposed major modifications to determine if the source would meet all applicable emission requirements, including new source performance standards, and emission standards for hazardous air pollutants. No permit will be issued unless the proposed new source can meet the applicable emission standards.

(b) In addition, for each proposed major new source with allowable emissions exceeding 50 tons per year, 1000 pounds per day, or 100 pounds per hour, whichever is most restrictive, the District shall determine if the source will cause or contribute to a violation of an ambient air quality standard.

(c) When a source is constructed or modified in increments which individually do not exceed the above allowable emissions and the increments have not been offset in accordance with this regulation, the allowable emissions from all such increments granted a permit to construct after December 21, 1976, shall be added together and this regulation shall be applicable when a proposed increment would cause the sum of the allowable emissions which have not been offset to equal or exceed 50 tons per year, 1000 pounds per day, or 100 pounds per hour. If the total modification would cause or contribute to a violation of an ambient air quality standard, all of the provisions of this regulation are then applicable to each increment. If any of the increments has not previously been subject to section 4 (a) (i) (requiring the source to meet the lowest achievable emission rate), such determinations must consider the stage of construction of such increment and the ability of the source to install additional control equipment.

(d) New major sources or major modifications of existing sources emitting volatile organic compounds impacting on areas designated as non-attainment for ozone or otherwise shown to be in violation of the ambient standard for ozone, shall be subject to the provisions of section 4.

(e) The determination as to whether a new major source or major modification would cause or contribute to an exacerbation of any violation of an ambient air quality standard shall be made as of the start-up date of the source.

(f) Sources locating in clean portions of non-attainment areas.

(i) A new major source or major modification locating in a portion of a designated non-attainment area where the ambient air quality standards have been met, or where the portion will have attained the standards by the source's start-up date, shall be exempt from the requirements of this section if the allowable emissions from the source or facility (not including any emission reductions achieved elsewhere in the source) would not cause the following significance levels to be exceeded in the actual area of non-attainment as of the new source's start-up date.

Pollutant	Averaging Time				
	Annual	24 Hr.	8 Hr.	3 Hr.	1 Hr.
SO_2	1.0 ug/m^3	5 ug/m^3		25 ug/m^3	
TSP	1.0 ug/m^3	5 ug/m^3			
NO_2	1.0 ug/m^3				
CO			0.5 mg/m^3		2 mg/m^3

(ii) If the source would exceed the significance levels in the actual area of non-attainment, all requirements of this regulation shall be applicable except that the source shall be exempt from section 4 (a) (iii).

(iii) It will be assumed initially that every locality in a designated non-attainment area will exceed the ambient standard (as of the new source start-up date), and that any major source locating in the area will significantly contribute to the violation. However, if the applicant or any other participant presents a substantial and relevant argument to the District (including any necessary analysis or other demonstration) that the assumption is incorrect, the District shall reconsider the assumption.

(g) Sources in attainment or unclassifiable areas

For areas designated by the Board as attainment or unclassifiable as to their attainment status, new major sources or major modifications locating in such areas which would exceed the levels in section 3 (f) (i) at any location that does not meet the ambient standard are subject to the requirements of this regulation. Such a source shall be exempted from section 4 (a) (iii) if the requirements of section 4 are otherwise fulfilled.

(h) Fugitive soil sources

New major sources or major modifications locating in an actual area of non-attainment which emit fugitive soil shall be subject to section 4.

SECTION 4. CONDITIONS FOR APPROVAL

(a) If the District finds that the emissions from a proposed new source or major modification would contribute to existing violations of an ambient standard as of the source's proposed start-up date, approval may be granted only if:

(i) The new major source or major modification meets an emission limitation which specifies the lowest achievable emission rate; and

(ii) The applicant certitifes that all existing major sources in Kentucky owned, operated or controlled by the applicant or by any entity who controls or shares control of the source with the applicant, are in compliance with all applicable emission limitations and standards or are in compliance with an enforceable and expeditious schedule which meets the requirements of Regulation 1.08 and,

(iii) Emission reductions (offsets) from existing sources in the area of the proposed source, regardless of ownership, are obtained so as to meet the reasonable further progress requirements of section 6 (h).

(iv) The emission reductions shall provide a net air quality benefit in the affected area.

(c) For a new major source or major modification of volatile organic compounds or carbon monoxide proposed for construction or modification impacting within a designated non-attainment area for carbon monoxide or ozone, the applicant shall provide an analysis of alternative sites, sizes, production processes, and environmental control techniques for such a proposed source which demonstrate that the benefits of the proposed source significantly outweight the environmental and social costs imposed as a result of its location, construction or modification.

(d) The emission limitations for the new major source or major modification as well as any existing sources affected by the requirements of this regulation shall be enforceable in accordance with the mechanisms set forth in section 6 (i).

SECTION 5. EXEMPTIONS

(a) Exemptions from certain conditions

The District may exempt the following sources from section 4 (a) (iii) and 4 (a) (iv):

(i) Resource recovery facilities burning municipal solid waste;

(ii) Sources which must switch fuels due to lack of adequate fuel supplies or where a source is required to be modified as a result of U. S. Environmental Protection Agency regulations or other federal statutes and no exemption from such regulation or statute is available to the source.

(b) The above exemptions in Subsection 5 (a) may be granted only if:

(i) The applicant demonstrates that it made its best efforts to obtain sufficient emission offsets to comply with section 4 (a) (iii) and 4 (a) (iv) and that such efforts were unsuccessful; and

(ii) The applicant has secured all available emission offsets; and

(iii) The applicant will continue to seek the necessary emission offsets and apply them when they become available.

(c) Temporary emission sources, such as pilot plants, portable facilities which will be relocated after a short period of time, and emissions resulting from the construction phase of a new source, shall be exempt from sections 4 (a) (iii) and 4 (a) (iv).

(d) For sources of volatile organic compounds or nitrogen oxides, fulfillment of the requirements of section 4 (a) (iii) will be considered adequate to meet the requirements of section 4 (a) (iv).

(e) Major sources or major modifications locating in an actual non-attainment area which emit fugitive soil shall be exempt from section 4 (a) (iv).

SECTION 6. EMISSION OFFSETS

(a) The baseline for determining credit for emission reductions or offsets will be the applicable emission limitations in effect at the time the application to construct or modify a source is filed. Where the District requires certain hardware controls in lieu of an emission limitation, baseline allowable emissions shall be based on actual operating conditions for the previous two year period [illegible] conjunction with the required hardware controls.

(b) Where there is no applicable emission limitation for [illegible] source or a source category, the emission offset baseline including such sources shall be the actual emissions determined under actual operating conditions for the previous two year period. Where the emission limitations required by the District allow greater emissions than the potential emission rate of the source, emissions offset credit will be allowed only for control below the potential emission rate.

(c) The emissions for determining emission offset credit involving an existing fuel combustion source will be the allowable emissions under the emission limitation requirements of the District for the type of fuel being burned at the time the new source or modification application is filed. If the existing source commits to switch to a different fuel at some future date, emission offset credit based on the allowable emissions for the fuel involved is not acceptable unless the permit is conditioned to require the use of a specified alternative control measure which would achieve the same degree of emission reduction should the source switch back to the original fuel at some later date.

(d) A source may be credited with emission reductions achieved by shutting down an existing source or permanently curtailing production or operating hours below baseline levels provided that the work force to be affected has been notified in writing of the proposed shutdown or curtailment, the environmental benefits accruing thereby, and the economic benefits thereof. Source shutdowns and curtailments in production or operating hours occurring prior to the date a new source applicationis filed which do not comply with the intent of Section 6(h) shall not be used for emission offset credit. However, where an applicant can establish that it shut down or curtailed production after August 7, 1977, or less than one year prior to the date of permit application, whichever is earlier, and the proposed new source is a replacement for the shutdown or curtailment, credit for such shutdown or curtailment, may be applied to offset emissions from the new source.

(e)

- (i) Offset credit shall be allowed for reduction in emissions for the same pollutant.
- (ii) Emission offset credit may be allowed for replacing one volatile organic compound for another in equal quantity if the replacement compound is methane or ethane.

(f) For offsets approved after the effective date of this regulation, the District may allow offsets which exceed the reasonable further progress requirement of section 6 (h) to be banked for use in the future. The District, in allowing sources to retain control of banked emissions past June 30, 1979, shall exercise control of how and when such banked emissions are used. The District shall not approve the construction of a source using banked emissions if the new source would interfere with reasonable further progress of section 6 (h) toward attainment. To preserve banked emission reductions, the District shall identify them in a permit.

(g) Location of offsetting emissions. In the case of emission offsets involving volatile organic compounds, the offsets may be obtained from sources located anywhere which would impact upon the non-attainment area impacted by the proposed new source. For sulfur dioxide, particulate matter and carbon monoxide, the District shall require atmospheric simulation modeling to ensure that the emission offsets provide a positive net air quality benefit. Modeling shall be in accordance with Regulation 2.11.

(h) Reasonable progress toward attainment. By the time of start-up of operations of the major new sources or major modifications, the total allowable emissions (from existing sources in the non-attainment area, and from new or modified sources which are not major sources in the same area and from theproposed major source locating in the area taking into account all proposed offsets) shall be sufficiently less than the total emissions from existing sources allowed in the area under the requirement of the District prior to application for such permit to construct or modify so as to represent reasonable further progress towards attainment of the ambient air quality standards.

(i) Administrative Procedures

(i) The necessary emission offsets may be proposed either by the owner of the proposed source or by the District. The emission reduction committed to must be enforceable by the District, and must be accomplished by the new source's start-up date. If emission reductions are to be obtained in a state that neighbors Jefferson County, the emission reductions committed to must be enforceable by the neighboring state and/or local agencies and the U. S. Environmental Protection Agency.

(ii) Source-initiated emission offsets. The owner and/or operator of a source may propose emission offsets which involve: reductions from sources controlled by the owner (internal emission offsets); and/or reductions from other sources (external emission offsets). As long as the emission offsets obtained represent reasonable progress toward attainment, they will be acceptable. An internal emission offset will be considered enforceable if it is made a requirement of the District by inclusion as a condition of the new source permit. An external emission offset will not be accepted unless the affected source(s) is subject to a new emission limitation requirement of the District to ensure that its emissions will be reduced by a specified amount in a specified time. The form of the new emission limitation may be a District regulation, operating permit condition, consent or enforcement order, or any arrangement available to the District that is enforceable.

(iii) District-initiated emission offsets. The District may commit to reducing emissions from existing sources (including mobile sources) to provide a net air quality benefit in the impact area of the proposed new source so as to accommodate the proposed new source. The commitment must be in compliance with section 6 (h) and must be reflected in the emission limitation requirements of the District for the new and existing sources as required by the preceding paragraph (ii) of this section.

REGULATION 2.05 PREVENTION OF SIGNIFICANT DETERIORATION

SECTION 1. APPLICABILITY

The provisions of this section shall apply to those affected facilities for which permits are obtained or are required to be obtained on or after August 7, 1977, due to new construction, reconstruction, or modification occurring on or after that date and which either separately or cumulatively meet the capacity size cutoffs and/or potential emission cutoffs specified below in the definitions of "major stationary source" and " major modification", and impact on attainment or unclassified areas with respect to secondary ambient air quality standards.

SECTION 2. DEFINITIONS

(a) "Major stationary source" means:

(i) Any of the following stationary sources of air pollutants which emit, or have the potential to emit, 100 tons per year or more of any air pollutant regulated by the District: Fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary copper ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants(furnace process), primary lead smelters, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, Petroleum storage and transfer units with a total storage capacity exceeding 300 thousand barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants; and

(ii) Notwithstanding the source sizes specified above, any source which emits, or has the potential to emit, 250 tons per year or more of any pollutant regulated by the District.

(b) "Major modification"means any physical change in, change in the method of operation of, or addition to a stationary source which increases the potential emission rate of any air pollutant regulated by the District (including any not previously emitted and taking into account all accumulated increases in potential emissions occurring at the source since August 7, 1977, approval issued for the source pursuant to this regardless of any emission reductions achieved elsewhere in the source) by either 100 tons per year or more for any source category identified in paragraph (a)(i) of this section, or by 250 tons per year or more for any stationary source.

(i) A physical change shall not include routine maintenance, repair and replacement.

(ii) A change in the method of operation, unless previously limited by enforceable permit conditions; shall not include:

a. An increase in the production rate, if such increase does not exceed the operating design capacity of the source;

b. An increase in the hours of operation;

c. Use of an alternative fuel or raw material by reason of an order, rule, or natural gas curtailment plan as approved by the District.

d. Use of an alternative fuel or raw material, if prior to January 6, 1975, the source was capable of accommodating such fuel or material; or

e. Change in ownership of the source.

(c) "Commence" as applied to construction of a major stationary source or major modification means that the owner or operator has all necessary preconstruction approvals or permits and either has:

(i) Begun, or caused to begin, a continuous program of physical onsite construction of the source, to be completed within a reasonable time; or

(ii) Entered into binding agreements or contractual obligations, which cannot be cancelled or modified without substantial loss to the owner or operator, to undertake a program of construction of the source to be completed within a reasonable time.

(d) "Necessary preconstruction approvals or permits" means those permits or approvals required under District air quality control laws and regulations.

(e) "Baseline concentration" means that ambient concentration level reflecting actual air quality as of August 7, 1977, minus any contribution from major stationary sources and major modifications on which construction commenced on or after January 6, 1975. The baseline concentration shall include contributions from:

(i) The actual emissions of other sources in existence on August 7, 1977; and

(ii) The allowable emissions of major stationary sources and major modifications which commenced construction before January 6, 1975, but were not in operation by August 7, 1977.

(f) "Allowable emissions" means the emission rate calculated using the maximum rated capacity of the source (unless the source is subject to enforceable permit conditions which limit the operating rate, or hours of operation, or both) and the most stringent of the following:

(i) Applicable standards as set forth in Regulation 5, 6, or 7, or

(ii) The emission rate specified as a permit condition.

(g) The definitions of other terms related to this regulation which may be found in Regulation 1.02 include: potential to emit, air pollution control control equipment, annual potential, source, affected facility, fugitive soil, construction, best available control technology, reconstruction and fixed capital cost.

SECTION 3. AMBIENT AIR INCREMENTS

Increases in pollutant concentration over the baseline concentration shall be limited to the following:

Maximum allowable increases (micrograms per cubic meter)

Particulate matter	
Annual geometric mean	19
24-hr maximum	37
Sulfur dioxide:	
Annual arithmetic	20
24-hr maximum	19
3-hr maximum	512

For any period other than an annual period, the applicable maximum allowable increase may be exceeded during one such period per year at any one location.

SECTION 4. AMBIENT AIR CEILINGS

No concentration of a pollutant shall exceed the concentration permitted under any National Ambient Air Quality Standard (NAAQS).

SECTION 5.

Review of New Major Stationary Sources and Major Modifications; Source Applicability and General Exemptions.

REGULATION 2.06. PERMIT REQUIREMENTS - OTHER SOURCES

All other sources not subject to Regulation 2.04 or 2.05 shall be reviewed for compliance with applicable emission standards for existing sources, national emission standards for hazardous air pollutants, new source performance standards or other standards as the District may require. No permit shall be issued unless the source can demonstrate compliance with all applicable standards.

REGULATION 2.07. PUBLIC NOTIFICATION

SECTION 1. OPPORTUNITY FOR PUBLIC COMMENT

Prior to the issuance of a permit to construct or modify a major source, opportunity shall be given for the public to comment on the inforamtion submitted by the owner or operator of the source to the District and on the District's intent to approve or disapprove the request Such opportunity to comment shall include:

(a) availability of the District'an analysis of the source's potential impact on air quality,

(b) a 30 day period for submittal of public comment,

(c) a legal notice of the request

SECTION 2. PSD NOTIFICATIONS

For permits issued under Regulation 2.05, the District shall:

(a) Notify the public, by advertisement in a newspaper of general circulation, of the application, the preliminary determination, the degree of increment consumption that is expected from the source or modification, and the opportunity for comment at a public hearing as well as written public comment.

(b) Send a copy of the notice of public comment to the applicant and to officials and agencies having cognizance over the location where the proposed construction would occur as follows: the chief executives of the city and county where the source or modification would be located, any comprehensive regional land use planning agency and any State, whose lands may be affected by emissions from the source or modification.

(c) Provide opportunity for a public hearing for interested persons to appear and submit written or oral comments on the air quality impact of the source or modification, alternatives to thesource or modification, the control technology required, and other appropriate considerations.

(d) Consider all written comments submitted within a time specified in the notice of public comment and all comments received at any public hearing(s) in making a final decision on the approvability of the application. No later than 10 days after the close of the public comment period, the applicant may submit a written response to any comments submitted by the public. The District shall consider the applicant's response in making a final decision. The District shall make all comments available for public inspection at the District's office.

SECTION 3. PUBLIC NOTIFICATION COSTS

The cost of public notifications prescribed under this regulation for a major source shall be borne by the applicant.

REGULATION 2.08. PERMIT FEES AND RENEWAL

SECTION 1. PERMIT FEES

Fees for permits issued pursuant to this regulation shall be:

(a) $15 for operating permits

(b) $15 for construction permits

(c) $2000/year maximum operating permit fee per source

(d) Payable by check or money order to the District and due thirty days after inspection bythe District.

(e) On applications for construction permits where there are two or more identical pieces of equipment at the same location, the fee shall be the same as that specified for one such piece of equipment.

SECTION 2. PERMIT RENEWAL AND TRANSFER

(a) Operating permits shall be renewed yearly for major sources as defined in Regulation 1.02 (46).

(b) All other sources shall renew operating permits every three years.

(c) Permits issued under this section are not transferrable.

SECTION 3. REVIEW OF PERMIT FEE SCHEDULE

Fees stated in this section shall be reviewed each year by the Board.

REGULATION 2.09. CAUSES FOR PERMIT SUSPENSION

SECTION 1. SUSPENSION BY THE BOARD

The Board may modify a permit issued hereunder or recommend to the Hearing Board the revocation of anypermit issued hereunder for the following causes:

(a) Failure to comply with the terms and conditions of the permit;

(b) Failure to comply with emissions standards applicable to an affected facility;

(c) Failure to comply with the ambient air quality standards for the area in which the source is located.

(d) Failure to report process or equipment changes which result in an emission increase.

SECTION 2. SUSPENSION BY THE AIR POLLUTION CONTROL OFFICER

(a) The Air Pollution Control Officer may suspend a permit issued hereunder for failure to provide information, analyses, plans or specifications upon request of the Air Pollution Control Officer relating to an affected facility or for willfully making misstatements in permit applications or any amendments thereto. Such suspensions may be appealed to the Hearing Board in accordance with Regulation 1.08.

(b) The Air Pollution Control Officer shall suspend a permit issued hereunder if the affected facility is to be shut down for an extended period or replaced with a new, reconstructed, or modified affected facility.

REGULATION 2.10. STACK HEIGHT CONSIDERATIONS

SECTION 1. APPLICABILITY

This regulation applies to all stacks constructed in Jefferson County which emit air contaminants from an affected facility.

SECTION 2. DEFINITIONS

For the purpose of this section:

(a) "In existence" means that the stack is physically complete and ready to be used for its intended purpose.

(b) "Dispersion technique" means any method which attempts to affect the concentration of a pollutant in the ambient air by (1) use of that portion of a stack which exceeds good engineering practice stack height, (2) varying the rate of emission of a pollutant, or (3) the manipulation of source process parameters or selective handling of exhaust streams. The preceding sentence does not include the reheating of a gas stream, following use of a pollution control system, for the purpose of returning the gas to the temperature at which it was originally discharged from the facility generating the gas stream.

(c) "Good engineering practice stack height" means that stack height necessary to ensure that emissions from the stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of atmospheric downwash, eddies, and wakes which may be created by the source itself, nearby structures or nearby terrain obstacles and shall not exceed as appropriate:

(i) 30 meters, for stacks uninfluenced by structures or terrain;

(ii) $H_G = H + 1.5 L$

where H = height of structure or nearby structure

L = lesser dimension (height or width) of the structure or nearby structure;

for stacks influenced by structures;

(iii) such height as an owner or operator of a source demonstrates is necessary through the use of field studies or fluid models after notice and opportunity for public hearing.

(d) "Excessive concentrations" for the purpose of determining good engineering practice stack heights in fluid modeling studies means a maximum concentration in excess of an ambient air quality standard, due in part or whole to downwash, wakes or eddies which is 40 percent in excess of the maximum conentration experienced in the absence of downwash, wakes or eddy effects produced by nearby structures or terrain.

SECTION 3. COMPLIANCE

Stack emissions of any source which are controlled in order to attain and maintain an ambient air quality standard or to prevent significant deterioration of the air quality, shall be accomplished through emission limitation alone. The degree of emission limitation so required of any source for control of any air pollutant shall not be affected by so much of that source's stack height that exceeds good engineering practice or by any other dispersion technique, except as provided in section 5 of this regulation.

SECTION 4. TIMETABLE

No later than six months after the enactment of this regulation, the District shall, after notice and opportunity for public hearing, utilize all stack heights in a manner consistent with these regulations.

SECTION 5. EXEMPTIONS

Stack heights in existence, or dispersion techniques implemented as part of a control strategy or permit review prior to December 30, 1970, or coal-fired stream electric generating units, which commenced operation before July 1, 1957, and whose stacks were constructed under a construction contract awarded before February 8, 1974, are exempt from the requirements of this regulation.

REGULATION 2.11. AIR QUALITY MODEL USAGE

SECTION 1.

All air quality modeling required under the District regulations shall be based on the applicable air quality models, data bases, and other requirements specified in the "Guideline on Air Quality Models" (OAQPS 1.2-080, U. S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N. C. 27711).

SECTION 2.

Where it is judged that an air quality impact model as specified in the "Guideline on Air Quality Models" is inappropriate or that another model is preferable, the specified model may be modified or another model substituted subject to the approval of the District.

(a) No new major stationary source shall be constructed and no major modification shall be made to any source unless the requirements of sections 6 through 13 of this regulation, as applicable have been met. Such requirements shall apply to a proposed new source or modification only with respect to those pollutants for which it would be a major stationary source or major modification.

(b) The requirements of sections 6, 8, 10, and 12 of this section shall not apply to a new major stationary source or major modification with respect to a particular pollutant if the owner or operator demonstrates that:

  (i) As to that pollutant, the source or modification is subject to the emission offset regulation (Regulation 2.04); and

  (ii) The source or modification would impact no area attaining the national ambient air quality standards (either internal or external to areas designated as nonattainment under Section 107 of the Clean Air Act);

(c) A portable facility which has previously received construction approval under the requirements of this section as applicable may relocate without again being subject to those requirements if:

  (i) Emissions from the facility would not exceed allowable emissions;

  (ii) Emissions from the facility would impact no area where an applicable increment is known to be violated; and

  (iii) Notice is given to the District at least 30 days prior to such relocation identifying the proposed new location and probable duration of operation at such location.

SECTION 6. CONTROL TECHNOLOGY REVIEW

(a) A new major stationary source or major modification shall meet all applicable District emission limitations.

(b) A new major stationary source or major modification shall apply best available control technology for each applicable pollutant, unless the increase in allowable emissions of that pollutant from the source or modification would be less than 50 tons per year, 1,000 pounds per day, or 100 pounds per hour, whichever is most restrictive.

  (i) The preceding hourly and daily rates shall apply only with respect to a pollutant for which an increment, or national ambient air quality standard, for a period less than 24 hours or for a 24 hour period, as appropriate, has been established.

  (ii) In determining whether and to what extent a modification would increase allowable emissions, there shall be taken into account no emission reductions achieved elsewhere at the source at which the modification would occur.

(c) In the case of a modification, the requirement for best available control technology shall apply only to each new or modified affected facility which would increase the allowable emissions of an applicable pollutant.

(d) Where an affected facility within a source would be modified but not reconstructed, the requirements for best available control technology, notwithstanding paragraph (b) of this section, shall not apply to such facility if no net increase in emissions of an applicable pollutant would occur at the source, taking into account all emission increases and decreases at the source which would accompany the modification, and no adverse air quality impact would occur.

(e) For phased construction projects the determination of best available control technology shall be reviewed, and modified as appropriate, at the latest reasonable time prior to commencement of construction of each independent phase of the proposed source or modification.

SECTION 7. EXEMPTIONS FROM IMPACT ANALYSES

(a) The requirements of sections 8, 10, 12, and 13 shall not apply to a new major modification with respect to a particular pollutant, if:

(i) The increase in allowable emissions of that pollutant from the source or modification would impact no area where an applicable increment is known to be violated; and

(ii) The increase in allowable emissions of that pollutant from the source or modification would be less than 50 tons per year, 1000 pounds per day, or 100 pounds per hour, whichever is more restrictive; or

(iii) The emissions of the pollutant are of a temporary nature including but not limited to those from a pilot plant, a portable facility, construction, or exploration; or

(iv) A source is modified, but no increase in the net amount of emissions for any pollutant subject to a national ambient air quality standard and no adverse air quality impact would occur.

(b) The hourly and daily rates set in paragraph (a)(ii) of this section shall apply only with respect to a pollutant for which an increment, or national ambient air quality standard, for a period of less than 24 hours or for a 24 hour period, as appropriate, has been established.

(c) In determining for the purpose of paragraph (a) (ii) of this section whether and to what extent the modification would increase allowable emissions, there shall be taken into account no emission reduction achieved elsewhere at the source at which the modification would occur.

(d) In determining for the purpose of paragraph (a) (iv) of this section whether and to what extent there would be an increase in the net amount of emissions for any pollutant subject to a national ambient air quality standard from the source which is modified, there shall be taken into account all emission increases and decreases occuring at the source since August 7, 1977.

(e) The requirements of sections 8, 10, 12, and 13 of this section shall not apply to a new major stationary source or to a major modification with respect to emissions from it which the owner or operator has shown to be fugitive soil.

(f) The exemption from section 13 referred to in section 7(a) and 7(e) of this section does not exempt a major source from the requirements of section 7(1) of Regulation 2.

SECTION 8. AIR QUALITY REVIEW

(a) The owner or operator of the proposed new major source or modification shall demonstrate that allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reductions would not cause or contribute to air pollution in violation of:

(i) Any national ambient air quality standard; or

(ii) Any applicable maximum allowable increase over the baseline concentration in any area.

SECTION 9. AIR QUALITY MODELS

All air quality modeling required under this section shall be subject to the provisions of Regulation 2.11.

SECTION 10. MONITORING

(a) The owner or operator of a new major source or modification shall, after construction of the source or modification, conduct such ambient air quality monitoring as the District determines may be necessary to establish the effect which emissions from the source or modification of a pollutant for which a national ambient air quality standard exists (other than non-methane hydrocarbons) may have, or is having, on air quality in any area which such emissions would affect.

(b) As necessary to determine whether emissions from the proposed new major source or modification would cause or contribute to a violation of a national ambient air quality standard, any permit application submitted after August 7, 1978, shall include an analysis of continuous air quality monitoring data for any pollutant emitted by the source or modification for which a national ambient air quality standard exists, except non-methane hydrocarbons. Such data shall relate to, and shall have been gathered over, the year preceding receipt of the complete application, unless the owner or operator demonstrates to the District's satisfaction that such data gathered over a portion or portions of that year or another representative year would be adequate to determine that the source or modification would not cause or contribute to a violation of a national ambient air quality standard.

SECTION 11. SOURCE INFORMATION

(a) The owner or operator of a proposed new major source or modification shall submit all information necessary to perform any analysis or make any determination required under this section.

(b) Such information shall include a complete application for a permit meeting the requirements of Regulation 2.03, Section 2.

(c) Upon the request of the District, the owner or operator shall also provide various air quality related data.

SECTION 12. ADDITIONAL IMPACT ANALYSES

(a) The owner or operator shall provide an analysis of the impariment to visibility, soils and vegetation that would occur as a result of the new major source or modification and general commercial, residential, industrial and other growth associated with the source or modification. The owner or operator need not provide an analysis of the impact on vegetation having no significant commercial or recreational value.

(b) The owner or operator shall provide an analysis of the air quality impact projected for the area as a result of general commercial, residential, industrial and other growth associated with the new major source or modification.

SECTION 13. PUBLIC PARTICIPATION

(a) Within 30 days after the receipt of an application to construct, reconstruct, or modify, or any addition to such application, the District

shall advise the owner or operator of any deficiency in the application or in the information submitted. In the event of such a deficiency the date of receipt of the application shall be, for the purpose of this section, the date on which the District received all required information.

(b) As expeditiously as possible but within 180 days after receipt of a complete application, the District shall make a final determination on the application. This involves performing the following actions in a timely manner:

(i) Make a preliminary determination whether construction or modification should be approved, approved with conditions, or disapproved.

(ii) Except as exempted by the Open Records Policy (Regulation 1.08), make available at the District's office a copy of all materials submitted by the owner or operator, a copy of the District's preliminary determination and a copy or summary of other materials, if any, considered by the District in making the preliminary determination.

(iii) Notify the public in accordance with Regulation 2.07.

(iv) Make a final determination whether construction or modification should be approved, approved with conditions, or disapprove pursuant to this section.

(v) Notify the owner or operator in writing of the final determination and make such notification available for public inspection at the District's office.

SECTION 14. PROHIBITIONS AND SOURCE OBLIGATION

The prohibitions and source obligation set forth under Regulation 2.03 shall apply to any owner or operator of a new major source or modification subject to this Regulation.

REGULATION 3. AMBIENT AIR QUALITY STANDARDS

REGULATION 3.01. PURPOSE OF STANDARDS AND EXPRESSION OF NON-DEGRADATION INTENTION

SECTION 1.

Ambient air quality standards mean those levels of air quality which the Board judges are necessary, with an adequate margine of safety, to protect the public health and welfare from any known or anticipated adverse effects of air pollution. Such standards are subject to revision, and additional standards may be promulgated as the Board deems necessary to protect the public health and welfare.

SECTION 2.

In the establishment of these standards, it is the intention of the Board to prohibit further significant and avoidable deterioration of air quality in areas where air quality presently exists which is numerically equal to or is better than the standards expressed herein.

SECTION 3.

No person shall violate, or interfere with the attainment or maintenance of, ambient air quality standards as specified in this regulation.

REGULATION 3.02. APPLICABILITY OF AMBIENT AIR QUALITY STANDARDS

The ambient air quality standards stated in Regulation 3.04 shall apply, be achieved, and maintained at any single point in the District.

REGULATION 3.03. DEFINITIONS

SECTION 1.

For the purpose of Regulation 3:

(a) "Calendar quarter average" means an average determined on the basis of a consecutive 3 month interval coinciding with one of the four quarters of a calendar year.

(b) "Maximum" means an ambient air quality standard which shall not be exceeded more than once per year providing that the averages exceeding the standard do not contain any common hourly data points.

(c) "Three hour average" means an average determined on the basis of any consecutive 3 hour interval.

SECTION 2.

As used in this regulation, all terms not defined herein shall have the meaning given them in Regulation 1.02.

REGULATION 3.04. AMBIENT AIR QUALITY STANDARDS

SECTION 1. PRIMARY STANDARDS

The primary ambient air quality standards for sulfur oxides, particulate matter, carbon monoxide, total nonmethane hydrocarbons, lead nitrogen dioxide, photochemical oxidants, hydrogen fluoride, and odors measured by reference methods specified by the Board, or by equivalent methods, are:

(a) Sulfur Oxides (sulfur dioxide):

- (i) 80 micrograms per cubic meter (0.03 ppm) - annual arithmetic mean
- (ii) 365 micrograms per cubic meter (0.14 ppm) - maximum 24-hour average not to be exceeded more than once per year

(b) Particulate Matter:

(i) 75 micrograms per cubic meter - annual geometric mean.

(ii) 260 micrograms per cubic meter - maximum 24-hour average not to be exceeded more than one per year.

(c) Carbon Monoxide:

(i) 10 millilgrams per cubic meter (9 ppm) - maximum 8-hour average not to be exceeded more than once per year.

(ii) 40 milligrams per cubic meter (35 ppm) - maximum 1-hour average not to be exceeded more than once per year.

(e) Hydrocarbons (measured as CH_4 and corrected for methane, to be used as a guide in devising plans to achieve photochemical oxidant standards):

(i) 160 micrograms per cubic meter (0.24 ppm) - maximum 3-hour average (6:00 A.M. to 9:00 A.M.) not to be exceeded more than once per year.

(f) Nitrogen Dioxide:

(i) 100 micrograms per cubic meter (0.05 ppm) - annual arithmetic mean.

(g) Gaseous Fluorides (expressed as HF):

(i) 400 micrograms per cubic meter (0.5 ppm) - annual arithmetic mean

(h) Lead:

(i) Not to exceed 1.5 micrograms per cubic meter, calendar quarter average.

(i) Odors:

Any ambient air sample of at least 50 ml which, undiluted, is established by a documented investigaton or measurement to be offensive, foul, unpleasant, or repulsive.

SECTION 2. SECONDARY STANDARDS

The secondary ambient air quality standards for sulfur oxides, particulate matter, carbon monoxide, total nonmethane hydrocarbons, lead, nitrogen dioxide, hydrogen sulfide, photochemical oxidants, hydrogen fluoride, total fluorides, and odors measured by reference methods specified by the Board, or by equivalent methods are:

(a) Sulfur Oxides (sulfur dioxide):

(i) 1300 micrograms per cubic meter (0.50 ppm) maximum 3-hour average not to be exceeded more than once per year.

(b) Particulate Matter:

(i) 150 micrograms per cubic meter maximum 24-hour average not to be exceeded more than once per year.

(ii) 60 micrograms per cubic meter annual geometric mean, shall be used as a guide in assessing implementation plans to achieve the 24-hour primary standard.

(c) Carbon Monoxide:

Same as primary standards.

(e) Hydrocarbons:

Same as primary standard.

(f) Nitrogen Dioxide:

(i) 254 micrograms per cubic meter (0.135 ppm) maximum 24-hour average, not to be exceeded more than once per year.

(ii) 1,020 micrograms per cubic meter (0.54 ppm) maximum 1-hour average not to be exceeded more than once per year.

(iii) 100 micrograms per cubic meter (0.05 ppm) annual arithmetic mean.

(g) Gaseous Fluorides (expressed as HF):

(i) 0.5 micrograms per cubic meter (.60 ppb) - maximum 1-month average not to be exceeded more than once per year.

(ii) 0.80 micrograms per cubic meter (0.97 ppb) - maximum 1-week average not to be exceeded more than once per year.

(iii) 2.86 micrograms per cubic meter (3.5 ppb) - maximum 24-hour average not to be exceeded more than once per year.

(iv) 3.68 micrograms per cubic meter (4.5 ppb) - maximum 12-hour average not to be exceeded more than once per year.

(i) Total Fluorides:

Dry weight basis (as fluoride ion) in and on forage for consumption by grazing ruminants.

(i) Not to exceed 40 ppm (w/w) - average concentration of monthly samples over growing season (not to exceed 6 consecutive months).

(ii) Not to exceed 60 ppm (w/w) - 2-month average.

(iii) Not to exceed 80 ppm (w/w) - 1-month average.

(j) Lead

Same as primary standard

(k) Odors:

Same as primary standard

REGULATION 3.05. METHODS OF MEASUREMENT

Air contaminants shall be measured by the reference or equivalent methods and at such frequency as specified in United States Environmental Protection Agency regulations on Ambient Air Quality Surveillance (40 CFR 58) or, in the case of contaminants for which no national standard exists, by methods and at such frequency as specified by the District.

REGULATION 5

STANDARDS FOR HAZARDOUS AIR POLLUTANTS

REGULATION 5.01. GENERAL PROVISIONS

SECTION 1.

The provisions of this regulation apply to the owner or operator of any stationary source for which a standard is prescribed under this regulation. New or modified sources must comply with all standards upon commencing operation. Existing sources shall comply within 90 days after the effective date of this regulation. The provisions of this regulation shall be effective on September 1, 1976, except where another date is specified in a section within this regulation.

SECTION 2. EMISSION TESTS AND MONITORING

Emission tests and monitoring shall be conducted and reported as set forth in this regulation and by Appendix B to U. S. Environmental Protection Agency Regulation on National Emission Standards for Hazardous Air Pollutants (40 CFR 61).

SECTION 3.

The owner or operator of a new source subject to this chapter and, at the request of the District, the owner or operator of an existing source subject to this chapter shall provide or cause to be provided emission testing facilities as follows:

(a) Sampling ports adequate for test methods applicable to such source.

(b) Safe sampling platform(s).

(c) Safe access to sampling platform(s).

(d) Utilities for sampling and testing equipment.

SECTION 4. SOURCE TEST AND ANALYTICAL METHODS

Methods 101, 102, 104, 106 and 107 in Appendix B to 40 CFR 61 shall be used for all source tests required under this chpater unless an equivalent method or an alternative method has been approved by the U. S. Environmental Protection Agency. Where the test results using an alternative method do not adequately indicate whether a source is in compliance with a standard, the District may require the use of the reference method or its equivalent.

REGULATION 5.02. DEFINITIONS

SECTION 1. For the purpose of this section:

(a) "Stationary source" means any building, structure, facility, or installation which emits or may emit any air pollutant which has been designated as hazardous by the District.

(b) Terms used in this regulation not defined herein shall have the meaning given to them in Regulation 1.02.

REGULATION 5.03. POTENTIAL HAZARDOUS EMISSIONS

Persons responsible for a source from which hazardous matter may be emitted including but not limited to, antimony, arsenic, asbestos, beryllium, bismuth, lead, mercury, silica, tin, vinyl chloride, compounds of such materials, and other toxic materials shall give the utmost care and consideration to the potential harmful effects of the emissions resulting from such activities. Evaluation of such facilities as to adequacy and emission potential will be made on an individual basis by the District.

REGULATION 5.04 EMISSION STANDARD FOR ASBESTOS

SECTION 1. APPLICABILITY

The provisions of this section are applicable to those sources specified in section 3 of this regulation. The provisions of this section shall be effective on June 13, 1979.

SECTION 2. DEFINITIONS

For the purpose of this section:

(a) "Manufacturing" means the combining of commercial asbestos, or in the case of woven friction products the combining of textiles containing commercial asbestos, with any other material(s), including commercial asbestos, and the processing of this combination into a product as specified in section 3 (c) of this regulation.

(b) "Visible emissions" means any emissions which are visually detectable without the aid of instruments and which contain particulate asbestos material.

(c) Terms used in this section not defined herein shall have the meaning given to them in Regulation 1.02 and in Regulation 5.02.

SECTION 3. EMISSION STANDARD

(a) Asbestos mills: There shall be no visible emissions to the outside air from any asbestos mill except as provided in subsection (f) of this section.

(b) Roadways: The surfacing of roadways with asbestos tailings or with asbestos-containing waste that is generated by any source subject to subsections (c), (d), (e), or (h) of this section is prohibited, except for temporary roadways on an area of asbestos ore deposits. The deposition of asbestos tailings or asbestos containing waste on roadways covered with snow or ice is considered "surfacing."

(c) Manufacturing: There shall be no visible emissions to the outside air, except as provided in subsection (f) of this section, from any of the following operations if they use commercial asbestos or from any building or structure in which such operations are conducted:

(i) The manufacture of cloth, cord, wicks, tubing, tape, twine, rope, thread, yarn, roving, lap or other textile materials.

(ii) The manufacture of cement products.

(iii) The manufacture of fireproofing and insulating materials.

(iv) The manufacture of friction products.

(v) The manufacture of paper, millboard, and felt.

(vi) The manufacture of floor tile.

(vii) The manufacture of paints, coatings, caulks, adhesives, sealants.

(viii) The manufacture of plastics and rubber materials.

(ix) The manufacture of chlorine.

(x) The manufacture of shotgun shells.

(xi) The manufacture of asphalt concrete.

(d) Demolition and renovation: The requirements of this subsection shall apply to any owner or operator of a demolition or renovation operation who intends to demolish any institutional, commercial, or industrial building (including apartment buildings having more than four dwelling units), structure, facility, installation, or portion thereof which contains any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member that is covered or coated with friable asbestos materials, except as provided in paragraph (i) of this subsection; or who intends to renovate any institutional, commercial, or industrial building, structure, facility, installation, or portion thereof where more than eighty (80) linear meters (ca. 260 feet) of pipe covered or coated with friable asbestos material are stripped or removed, or more than fifteen (15) square meters (ca. 160 square feet) of friable asbestos materials used to cover or coat any duct, boiler, tank, reactor turbine furnace or structural member are stripped or removed.

(i) The owner or operator of a demolition operation is exempted from the requirements of this subsection provided, the amount of friable asbestos materials in the building or portion thereof to be demolished is less than eighty (80) linear meters (ca. 260 feet) used on pipes, and less than fifteen (15) square meters (ca. 160 square feet) used on any duct, boiler, tank, reactor, turbine, furnace, or structural member, and the following notification requirements are met. Written notification shall be postmarked or delivered to the District at least twenty (20) days prior to commencement of demolition and shall include the information required by paragraph (ii) of this subsection with the exception of the information required by subsection (d) (ii) c., f., g., h., and i. of this section, and shall state the measured or estimated amount of friable asbestos materials which is present. Techniques of estimation shall be explained.

(ii) Written notice of intention to demolish or renovate shall be provided to the Department by the owner or operator of the demolition or renovation operation. Such notice shall be postmarked or delivered to the District at least ten (10) days prior to commencement of demolition, or as early as possible prior to commencement of emergency demolition subject to paragraph (vii) of this subsection, and as early as possible prior to commencement of renovation. Such notice shall include the following information:

a. Name of owner or operator.

b. Address of owner or operator.

c. Description of the building, structure, facility, or installation to be demolished or renovated, including the size, age, and prior use of the structure, and the approximate amount of friable asbestos materials present.

d. Address or location of the building, structure, facility, or installation.

e. Scheduled starting and completion dates of demolition or renovation.

f. Nature of planned demolition or renovation and method(s) to be employed.

g. Procedures to be employed to meet the requirements of this paragraph and subsection (j) of this section.

h. The name and address or location of the waste disposal site where the friable asbestos waste will be deposited.

i. Name, title, and authority of the state or local governmental representative who has ordered a demolition which is subject to paragraph (vii) of this subsection.

(iii) For purposes of determining whether a planned renovating operation constitutes a renovation within the meaning of this subsection the amount of friable asbestos material to be removed or stripped shall be:

a. For planned renovating operations involving individually non-scheduled operations, the additive amount of friable asbestos material that can be predicted to be removed or stripped at a source over the maximum period of time for which a prediction can be made. The period shall not be less than thirty (30) days and not longer than one year.

b. For each planned renovating operation not covered by paragraph a. of this paragraph, the total amount of friable asbestos material that can be predicted to be removed or stripped at a source.

(iv) For purposes of determining whether an emergency renovating operation constitutes a renovation within the meaning of this subsection the amount of friable asbestos material to be removed or stripped shall be the total amount of friable asbestos material that will be removed or stripped as a result of the sudden, unexpected event that necessitated the renovation.

(v) The following procedures shall be used to prevent emissions of particulate asbestos material to outside air:

a. Friable asbestos materials, used on any pipe, duct, boiler, tank, reactor, turbine, furnace or structural member, shall be removed from any building, structure, facility, or installation subject to this subsection. Such removal shall occur before wrecking or dismantling of any portion of such building, structure, facility, or installation that would break up the friable asbestos materials and before wrecking or dismantling of any other portion of such building, structure, facility, or installation that would preclude access to such materials for subsequent removal. Removal of friable asbestos materials used on any pipe, duct, or structural member which are encased in concrete or other similar structural material is not required prior to demolition, but such material shall be adequately wetted whenever exposed during demolition.

b. Friable asbestos materials used on pipes, ducts, boilers, tanks, reactors, turbines, furnaces, or structural members shall be adequately wetted during stripping, except as provided in subparagraphs d, f, or g of this paragraph.

c. Pipes, ducts, boilers, tanks, reactors, turbines, furnaces, or structural members that are covered or coated with friable asbestos materials may be taken out of any building, structure, facility, or installation subject to this section as units or in sections provided the friable asbestos materials exposed during cutting or disjointing are adequately wetted during the cutting or disjointing operation. Such units shall not be dropped or thrown to the ground, but shall be carefully lowered to ground level.

d. The stripping of friable asbestos materials used on any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member that has been removed as a unit or in sections as provided in subparagraph c of this paragraph shall be performed in accordance with subparagraph b. of this paragraph. Rather than comply with the wetting requirement, a local exhaust ventilation and collection system may be used to prevent emissions to the outside air. Such local exhaust ventilation systems shall be designed and operated to capture the asbestos particulate matter produced by the stripping of friable asbestos materials. There shall be no visible emissions to the outside air from such local exhaust ventilation and collection systems except as provided in subsection f. of this section.

e. All friable asbestos materials that have been removed or stripped shall be adequately wetted to ensure that such materials remain wet during all remaining stages of demolition or renovation and related handling operations. Such materials shall not be dropped or thrown to the ground or a lower floor. Such materials that have been removed or stripped more than fifty (50) feet above ground level, except those materials removed as units or in sections, shall be transported to the ground via dust-tight chutes or containers.

f. Except as specified below, the wetting requirements of this paragraph are suspended when the temperature at the point of wetting is below 0°C (32°F). When friable asbestos materials are not wetted due to freezing temperatures, such materials on pipes, ducts, boilers, tanks, reactors, turbines, furnaces, or structural members shall, to the maximum extent possible, be removed as units or in sections prior to wrecking. In no case shall the requirements of subparagraphs d. or e. of this paragraph be suspended due to freezing temperatures.

g. For renovation operations, local exhaust ventilation and collection systems may be used, instead of wetting as specified in subparagraph b. of this paragraph to prevent emissions of particulate asbestos material to outside air when damage to equipment resulting from the wetting would be unavoidable. Upon request and supply of adequate information, the District will determine whether damage to equipment resulting from wetting to comply with the provisions of this subsection would be unavoidable. Such local exhaust ventilation systems shall be designed and operated to capture the asbestos particulate matter produced by the stripping removal of friable asbestos material. There shall be no visible emissions to the outside air from such local exhaust ventilation and collection systems except as provided in subsection f. of this section.

(vi) Sources subject to this subsection, demolition and renovation are exempt from the requirements to obtain permits as set forth in Regulation 2.

(vii) The demolition of a building, structure, facility, or installation, pursuant to an order of an authorized representative of a state or local governmental agency, issued because that building is structurally unsound and in danger of imminent collapse is exempt from all but the following requirements of subsection d. of this section.

a. The notification requirements specified by subsection (d) (ii) of this section.

b. The requirements on stripping of friable asbestos materials from previously removed units or sections as specified in subsection (d) (v) d. of this section.

c. The wetting, as specified by subsection (d) (v) e. of this section, of friable asbestos materials that have been removed or stripped.

d. The portion of the structure being demolished that contains friable asbestos materials shall be adequately wetted during the wrecking operation.

(e) Spraying: There shall be no visible emissions to the outside air from the spray-on application of materials containing more than one (1) percent asbestos, on a dry weight basis, used on equipment and machinery, except as provided in subsection (vi) of this section. Materials sprayed on buildings, structures, structural members, pipes, and conduits shall contain less than one (1) percent asbestos on a dry weight basis.

(i) Sources subject to this subsection, spraying, are exempt from the requirements to obtain permits of Regulation 2.

(ii) Any owner or operatior who intends to spray asbestos materials which contain more than one (1) percent asbestos on a dry weight basis on equipment and machinery shall report such intention to the District at least twenty (20) days prior to the commencement of the spraying operation. Such report shall include the following information:

a. Name of owner or operator.

b. Address of owner or operator.

c. Location of spraying operation.

d. Procedures to be followed to meet the requirements of this subsection.

(iii) The spray-on application of materials in which the asbestos fibers are encapsulated with a bituminous or resinous binder during spraying and which are not friable after drying is exempted from the requirements of this subsection.

(f) Rather than meet the no-visible-emission requirements of subsections (a), (c), (d), (e), (h), (j) and (k) of this section, an owner or operator may elect to use the methods specified by Section 4 to clean emissions containing particulate asbestos material before such emissions escape to, or are vented to, the outside air.

(g) Where the presence of uncombined water is the sole reason for failure to meet the no-vivible-emission requirement of subsections (a), (c), (d), (e), (h), (j), or (k) of this section, such failure shall not be a violation of such emission requirements.

(h) Fabricating: There shall be no visible emissions to the outside air, except as provided in subsection (f) of this section, from any of the following operations if they use commercial asbestos or from any building or structure in which such operations are conducted.

(i) The fabrication of cement building products.

(ii) The fabrication of friction products, except those operations that primarily install asbestos friction materials on motor vehicles.

(iii) The fabrication of cement or silicate board for ventilation hoods; ovens; electrical panels; laboratory furniture; bulkheads, partitions and ceilings for marine construction; and flow control devices for the molten metal industry.

(i) Insulating: Molded insulating materials which are friable and wet-applied insulating materials which are friable after drying, installed after the classification date of this regulation, shall contain no commercial asbestos. The provisions of this subsection do not apply to insulating materials which are spray applied; such materials are regulated under subsection (e) of this section.

(j) Waste disposal for manufacturing, fabricating, demolition, renovation and spraying operations: The owner or operator of any source covered under the provisions of subsections (c), (d), (e), or (h) of this section shall meet the following standards:

(i) There shall be no visible emissions to the outside air, except as provided in paragraph (iii) of this subsection, during the collection; processing, including incineration; packaging; transporting; or deposition of any asbestos-containing waste material which is generated by such source.

(ii) All asbestos-containing waste material shall be deposited at waste disposal sites which are operated in accordance with the provisions of this subsection.

(iii) Rather than meet the requirement of paragraph (i) of this subsection, an owner or operator may elect to use either of the disposal methods specified under paragraphs (iv) and (v) of this subsection, or an alternative disposal method which has received prior approval by the District.

(iv) Treatment of asbestos-containing waste material with water.

a. Control device asbestos waste shall be thoroughly mixed with water into a slurry and other asbestos-containing waste material shall be adequately wetted. There shall be no visible emissions to the outside air from the collection, mixing and wetting operations, except as provided in subsection (f) of this section.

b. After wetting, all asbestos-containing waste material shall be sealed into leak-tight containers while wet, and such containers shall be deposited at waste disposal sites which are operated in accordance with the provisions of this section.

c. The containers specified under subparagraph b. of this paragraph shall be labeled with a warning lable that states:

Caution
Contains Asbestos
Avoid Opening or Breaking Container
Breathing Asbestos is Hazardous
to Your Health

Alternatively, warning labels specified by Occupational Safety and Health Standards of the Department of Labor, Occupational Safety and Health Administration (OSHA) may be used.

(v) Processing of asbestos-containing waste material into non-friable forms:

a. All asbestos-containing waste material shall be formed into non-friable pellets or other shapes and deposited at waste disposal sites which are operated in accordance with the provisions of this section.

b. There shall be no visible emissions to the outside air from the collection and processing of asbestos-containing waste material, except as specified in subsection (f) of this section.

(vi) For the purposes of this subsection, the term "all asbestos-containing waste material" as applied to demolition and renovation operations covered by subsection (d) of this section includes only friable asbestos waste and control device asbestos waste.

(k) Waste disposal for asbestos mills. The owner or operator of any source covered under the provisions of subsection (a) of this section shall meet the following standards:

(i) There shall be no visible emissins to the outside air, except as provided in paragraph (iii) of this subsection during the collection, processing, packaging, transporting or deposition of any asbestos-containing waste material which is generated by such source.

(ii) All asbestos-containing waste material shall be deposited at waste disposal sites which are operated in accordance with the provisions of this subsection.

(iii) Rather than meet the requirement of paragraph (i) of this subsection, an owner or operator may elect to meet the following requirements in paragraphs (iv) and (v) of this subsection, or use an alternative disposal method which has received prior approval by the District.

(iv) There shall be no visible emissions to the outside air from the transfer of control device asbestos waste to the tailings conveyor, except as provided in subsection (f) of this section. Such waste shall be subsequently processed either as specified in paragraph (v) of this subsection or as specified in subsection (j) (iii) of this section.

(v) All asbestos-containing waste material shall be adequately mixed, with a wetting agent recommended by the manufacturer of the agent to effectively wet dust and tailings, prior to depostion at a waste disposal site. Such agent shall be used as recommended for the particular dust by the manufacturer of the agent. There shall be no discharge of visible emissions to the outside air from the wetting operation except as specified in subsection (f) of this section. Wetting may be suspended when the ambient temperature at the waste disposal site is less than minus 9.5°C (ca. fifteen (15)$^{\circ}$F). The ambient air temperature shall be determined by an appropriate measurement method with an accuracy of ± one (1) $^{\circ}$C (± two (2) $^{\circ}$F) and recorded at least at hourly intervals during the period that the operation of the wetting system is suspended. Records of such temperature measurement shall be retained at the source for a minimum of two (2) years and made available for inspection by the District.

(l) The owner of any inactive waste disposal site, which was operated by sources covered under subsections (a), (c), or (h), of this section and where asbestos-containing waste material produced by such sources was deposited, shall meet the following standards:

(i) There shall be no visible emissions to the outside air from an inactive waste disposal site subject to this paragraph, except as provided in paragraph (v) of this subsection.

(ii) Warning signs shall be displayed at all entrances, and along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material was deposited, at intervals of 100 m (ca. 330 ft.) or less, except as specified in paragraph (iv) of this subsection. Signs shall be posted in such a manner and location that a person may easily read the legend. The warning signs shall be 20" x 14" upright format signs and conform to the requirements specified in this subsection. The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

LEGEND
ASBESTOS WASTE DISPOSAL SITE
Do Not Create Dust
Breathing Asbestos Is Hazardous
to Your Health
Notation
1" Sans Serif, Gothic or Block
3/4" Sans Serif, Gothic or Block
14 Point Gothic

Spacing between lines shall be at least equal to the height of the upper of the two lines.

(iii) The perimeter of the site shall be fenced in a manner adequate to deter access by the general public, except as specified in paragraph (iv) of this subsection.

(iv) Warning signs and fencing are not required where the requirements of subsection (1) (v) a. or b. of this section are met, or where a natural barrier adequately deters access by the general public. Upon request and supply of appropriate information, the District will determine whether a fence or a natural barrier adequately deters access to the general public.

(v) Rather than meet the requirement of paragraph (i) of this subsection, an owner may elect to meet the requirements of this paragraph or may use an alternative control method for emissions from inactive waste disposal sites which has received prior approval by the District.

a. The asbestos-containing waste material shall be covered with at least fifteen (15) centimeters (ca. six (6) inches) of compacted non-asbestos-containing material, and a cover of vegetation shall be grown and maintained on the area adequate to prevent exposure of the asbestos-containing waste material; or

b. The asbestos-containing waste material shall be covered with at least sixty (60) centimeters (ca. two (2) feet) of compacted non-asbestos-containing material and maintained to prevent exposure of the asbeston-containing waste; or

c. For inactive waste disposal sites for asbestos tailings, a resinous or petroleum-based dust suppression agent which effectively binds dust and controls wind erosions shall be applied. Such agent shall be used as recommended for the particular asbestos tailings by the dust suppression agent manufacturer. Other equally effective dust suppression agents may be used upon prior approval by the District. For purposes of this subparagraph, waste crankcase oil is not considered a dust suppression agent.

SECTION 4. AIR-CLEANING

If air-cleaning is elected, as provided by section 3 (f) of this regulation, the requirements of this subsection shall be met.

(a) Fabric filter collection devices shall be used, except as noted in paragraphs (b) and (c) of this subsection. Such devices shall be operated at a pressure drop of no more than 4 inches water gauge, as measured across the filter fabric. The airflow permeability as determined by a method specified by the District, must not exceed 30 cubic feet/min/square foot for woven fabrics or 35 cubic feet/min/square foot for felted fabric, except that 40 cubic feet/min/square foot for woven and 45 cubic feet/min/square foot for felted fabrics is allowed for filtering air from asbestos ore dryers. Each square yard of felted fabric shall weigh at least 14 ounces and be at least 1/16 inch thick throughout. Synthetic fabrics shall not contain fill yarn other than that which is spun.

(b) If the use of fabric filters creates a fire or explosion hazard, the District may authorize the use of wet collectors designed to operate with a unit contacting energy of at least 40 inches water gauge pressure.

(c) The District may authorize the use of filtering equipment other than that described in paragraphs (a) and (b) of this subsection if the owner or operator demonstrates to the satisfaction of the District that the filtering of particulate asbestos material is equivalent to that of the described equipment.

(d) All air-cleaning equipment authorized by this subsection shall be properly installed, used, operated, and maintained. Bypass devices may be used only during upset or emergency conditions and then only for so long as it takes to shut down the operation generating the particulate asbestos material.

SECTION 5. REPORTING.

The owner or operator of any existing source to which this section is applicable shall, within ninety (90) days after the classification date of this regulation provide the following information to the District:

(a) A description of the emission control equipment used for each process;

(b) If a fabric filter device is used to control emissions, the pressure drop across the fabric filter in inches water gauge.

   (i) If the fabric filter device utilizes a woven fabric, the airflow permeability in cubic feet/min/square foot; and if the fabric is synthetic, indicate whether the fill yarn is spun or not spun.

   (ii) If the fabric filter device utilizes a felted fabric the density in ounces/square yard, the minimum thickness in inches, and the airflow permeability in cubic feet/min/square foot.

(c) Four sources subject to section 3 (j) and (k) of this regulation:

   (i) A brief description of each process that generates asbestos-containng waste material.

   (ii) The average weight of asbestos-containing waste material disposed of, measured in kg/day.

   (iii) The emission control methods used in all stages of waste disposal.

   (iv) The type of disposal site or incineration site used for ultimate disposal, the name of the site operator and the name and location of the disposal site.

(d) For sources subject to section 3 (l) of this regulation:

   (i) A brief description of the site.

   (ii) The method or methods used to comply with the standard, or alternative procedures to be used.

(e) The information described in this section shall be reported using a format provided by the District.

SECTION 6. WASTE DISPOSAL SITES.

In order to be an acceptable site for disposal of asbestos containing waste material under section 3 (i) and (k) of this regulation, an active waste disposal site shall meet the requirements of this section.

(a) There shall be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, except as provided in subsection (e) of this section.

(b) Warning signs shall be displayed at all entrances, and along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited, at intervals of 100 m (ca. 330 ft.) or less except as specified in subsection (d) of this section. Signs shall be posted in such a manner and location that a perosn may easily read the legend. The warning signs shall be 20" x 14" upright format signs and conform to the requirements specified in this subsection. The signs shall display the legend outlined in section 3 (l) (ii).

(c) The perimeter of the disposal site shall be fenced in order to adequately deter access to the general public except as specified in subsection (d) of this section.

(d) Warning signs and fencing are not required where the requirements of subsection (e) (i) of this section are met, or where a natural barrier adequately deters access to the general public. Upon request and supply of appropriate information, the District will determine whether a fence or a natural barrier adequately deters access to the general public.

(e) Rather than meet the requirement of subsection (a) of this section, an owner or operator may elect to meet the requirements of section 5 (e) (i) or (ii), or may use an alternative control method for emissions from active waste disposal sites which has received prior approval by the District.

(i) At the end of each operating day, or at least once every twenty-four (24) hour period while the site is in continuous operation, the asbestos-containing waste material which was deposited at the site during the operating day or previous twenty-four (24) hour period shall be covered with at least fifteen (15) centimeters (ca. six (6) inches) of compacted non-asbestos-containing material.

(ii) At the end of each operating day, or at least once every twenty-four (24) hour period while the disposal site is in continuous operation, the asbestos-containing waste material which was deposited at the site during the operating day or previous twenty-four (24) hour period shall be covered with a resinous or petroleum-based dust suppression agent which effectively binds dust and controls wind erosion. Such agent shall be used as recommended for the particular dust by the dust suppression agent manufacturer. Other equally effective dust suppression agents may be used upon prior approval by the District. For purposes of this paragraph, waste crankcase oil is not considered a dust suppression agent.

REGULATION 5.05 EMISSION STANDARD FOR BERYLLIUM

SECTION 1. APPLICABILITY

The provisions of this regulation are applicable to the following stationary sources:

(a) Extraction plants, ceramic plants, foundries, incinerators, and propellant plants which process beryllium ore, beryllium, beryllium oxide, beryllium alloys, or beryllium-containing waste;

(b) Machine shops which process beryllium, beryllium oxides, or any alloy when such alloy contains more than 5 percent beryllium by weight.

SECTION 2. DEFINITIONS

For the purpose of this regulation:

(a) "Beryllium-containing waste" means material contaminated with beryllium and/or beryllium compounds used or generated during any process or operation performed by a source subject to this regulation.

(b) "Extraction plant" means a facility chemically processing beryllium ore to beryllium metal alloy, or oxide, or performing any of the intermediate steps in these processes.

(c) "Foundry" means a facility engaged in the melting or casting of beryllium metal or alloy.

(d) "Machine shop" means a facility performing cutting, grinding, turning, honing, milling, deburring, lapping, electrochemical machining, etching, or other similar operations.

(e) Terms used in this section not defined herein shall the meaning given them in Regulation 1.02.

SECTION 3. EMISSION STANDARD

(a) Emissions to the atmosphere from stationary sources subject to the provisions of this regulation shall not exceed 10 grams of beryllium over a 24 hour period, except as provided in paragraph (b) of this section.

(b) Rather than meet the requirements of paragraph (a) of this section, an owner or operator may request approval from the District to meet an ambient concentration limit on beryllium in the vicinity of the stationary source of 0.01 ug/cubic meter averaged over a 30 day period.

  (i) Approval of such requests may be granted by the District provided that:

    a. At least 3 years of data is available which in the judgment of the District demonstrates that the future ambient concentrations of beryllium in the vicinity of the stationary source will not exceed 0.01 ug/cubic meter, averaged over a 30 day period. Such 3 year period shall be the 3 years ending 30 days before the effective date of this regulation;

    b. The owner or operator requests such approval in writing within 30 days after the effective date of this regulation which includes the following information:

      1. Description of sampling method including the method and frequency of calibration.

      2. Method of sample analysis.

      3. Averaging technique for determining 30 day average concentrations.

      4. Number, identity, and location (address, coordinates, or distances and heading from plant) of sampling sites.

      5. Ground elevations and height above ground of sampling inlets.

      6. Plant and sampling area plots showing emission points and sampling sites. Topographic features significantly affecting dispersion including plant building heights and locations shall be included.

7. Information necessary for estimating dispersion including stack height, inside diameter, exit gas temperature, exit velocity or flow rate and beryllium concentrations.

8. A description of data and procedures (methods or models) used to design the air sampling network (i.e., number and location of sampling sites).

9. Air sampling data indicating beryllium concentrations in the vicinity of the stationary source for the 3 year period specified in section 3 (b) (i) a. of this regulation. This data shall be presented chronologically and shall include the beryllium concentration and location of each individual sample taken by the network and the corresponding 30 day average beryllium concentrations.

(ii) Within 60 days after receiving such report, the District shall notify the owner or operator in writing whether approval is granted or denied. Prior to denying approval to comply with the provisions of paragraph (b) (i) of this section, the District will consult with representatives of the air contaminant source for which the demonstration report was submitted.

(c) The burning of beryllium and/or beryllium-containing waste, except propellants, is prohibited except in incinerators, emissions from which must comply with the standard specified in this regulation.

SECTION 4. STACK SAMPLING

(a) Each owner or operator required to comply with section 3 (a) of this regulation shall test emissions from his source as set forth in 40 CFR 61 as follows:

(i) Within 90 days of the effective date of this regulation in the case of an existing source or a new source which has initial startup date preceding the effective date of this regulation; or

(ii) Within 90 days of startup in the case of a new source which does not have an initial startup date preceding the effective date of this regulation.

(b) The District shall be notified at least 30 days prior to an emission test so that it may observe the tests.

(c) Samples shall be taken over such period or periods as are necessary to accurately determine the maximum emissions which will occur in any 24 hour period. Where emissions depend upon the relative frequency of operation of different types of processes, operating hours, operating capacities, or other factors, the calculation of maximum 24 hour period emissions shall be based on that combination of factors which are likely to occur during the subject period and which result in the maximum emissions. No changes in the operation shall be made which would potentially increase emissions above that determined by the most recent source test until a new emission level has been estimated by calculation and the results reported to the District.

(d) All samples shall be analyzed and beryllium emissions shall be determined within 30 days after the source test. All determinations shall be reported to the District.

(e) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available for inspection by the District for a minimum of 2 years.

SECTION 5. AIR SAMPLING

(a) Stationary sources subject to section 3 (b) of this regulation shall locate air sampling sites in accordance with a plan approved by the District. Such sites shall be located in such a manner calculated to detect maximum concentrations of beryllium in the ambient air.

(b) All monitoring sites shall be operated continuously except for a reasonable time allowance for instrument maintenance and calibration, for changing filters, or for replacement of equipment needing major repair.

(c) Filters shall be analyzed and concentrations calculated within 30 days after filters are collected. Records of concentrations at all sampling sites and other data needed to determine such concentrations shall be retained at the source and made available for inspection by the District for a minimum of 2 years.

(d) Concentrations measured at all sampling sites shall be reported to the District every 30 days.

(e) The District may at any time require changes in, or expansion of, the sampling network.

REGULATION 5.06 EMISSION STANDARD FOR MERCURY

SECTION 1. APPLICABILITY

The provisions of this regulation are applicable to those stationary sources which process mercury ore to recover mercury, or use mercury chlor-alkali cells to product chlorine gas and alkali metal hydroxide, or incinerate or dry wastewater treatment plant sludge.

SECTION 2. DEFINITIONS

For the purpose of this section:

(a) "Cell room" means a structure(s) housing one or more mercury electrolytic chlor-alkali cells.

(b) "Classification date" means:

(i) December 7, 1971 with respect to mercury ore processing facilities and mercury cell chlor-alkali plants;

(ii) October 25, 1974 with respect to sludge incineration plants, sludge drying plants or a combination of these that process wastewater treatment plant sludges.

(c) "Condenser stack gases" means the gaseous effluent evolved from the stack of processes utilizing heat to extract mercury metal from mercury ore.

(d) "Denuder" means a container which is part of a mercury chlor-alkali cell and in which water and alkali metal amalgam are converted to alkali metal hydroxide, mercury, and hydrogen gas in a short-circuited, electrolytic reaction.

(e) "End box" means a container(s) located on one or both ends of a mercury chlor-alkali electrolyzer which services as a connection between the electrolyzer and denuder for rich and stripped alalgam.

(f) "End box ventilation system" means a ventilation system which collects mercury pump sumps, and their water collection systems.

(g) Terms used in this section not defined herein shall have the meaning given them in Regulation 1.02 and Regulation 5.02.

SECTION 3. EMISSIONS STANDARD

(a) Emissions to the atmosphere from mercury ore processing facilities and mercury cell chlor-alkali plants shall not exceed 2300 grams of mercury per 24-hour period.

(b) Emissions to the atmosphere from sludge incineration plants, sludge drying plants, or a combination of these that process wastewater treatment plant sludges shall not exceed 3200 grams of mercury per 24-hour period.

SECTION 4. STACK SAMPLING

(a) Mercury ore processing facility

(i) Each owner or operator processing mercury ore shall test emissions from his source as set forth by the U.S. Environmental Protection Agency as follows:

a. Within 90 days of the classification date of this regulation in the case of an existing source.

b. Within 90 days of startup in the case of a new source.

(ii) The District shall be notified at least 30 days prior to an emission test, so that it may observe the test.

(iii) Samples shall be taken over such period or periods as are neccessary to accurately determine the maximum emissions which will occur in a 24 hour period. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until the new emission level has been estimated by calculation and the results reported to and approved by the District.

(iv) All samples shall be analyzed, and mercury emissions shall be determined within 30 days after the source test. Each determination will be reported to the District.

(v) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available for inspection by the District for a minimum of 2 years.

(b) Mercury chlor-alkali plant hydrogen and end-box ventilation gas streams.

(i) Each owner or operator employing mercury chlor-alkali cell(s) shall test emissions from its source as follows:

a. Within 90 days of the classification date of this regulation in the case of an existing source.

b. Within 90 days of startup in the case of a new source.

(ii) The District shall be notified at least 30 days prior to an emission test, so that it may at its option observe the test.

(iii) Samples shall be taken over such period or periods as are necessary to accurately determine the maximum emissions which will occur in a 24 hour period. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until the new emission has been estimated by calculation and the results reported to and approved by the District.

(iv) All samples shall be analyzed, and mercury emissions shall be determined within 30 days after the source test. All the determinations will be reported to the District.

(v) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available for inspection by the District for a minimum of 2 years.

(c) Mercury chlor-alkali plants - cell room ventilation system.

(i) Stationary sources using mercury chlor-alkali cells may test cell room emissions in accordance with paragraph (ii) of this subsection or demonstrate compliance with paragraph (iv) of this subsection and assume ventilation emissions of 1,300 g/day of mercury.

(ii) Each owner or operator shall pass all cell room air in forced gas steams through stacks suitable for testing as set forth by the U.S. Environmental Protection Agency as follows:

a. Within 90 days of the classification date of this regulation in the case of an existing source.

b. Within 90 days of startup in the case of a new source.

(iii) The District shall be notified at least 30 days prior to an emission test, so that it may at its option observe the test.

(iv) An owner or operator may carry out approved design, maintenance and housekeeping practices.

(d) Sludge incineration and drying plants

(i) Unless a waiver of emission testing is obtained from the District, each owner or operator of a source subject to the standard in (b) of section 3 of this regulation shall test emissions from that source. Such tests shall be conducted in accordance with the procedures set forth either in this subsection or in Section 5 of this regulation.

(ii) Method 101 in Appendix B to 40 CFR 61 shall be used to test emissions as follows:

a. The test shall be performed within 90 days of the classification date of this regulation in the case of an existing source.

b. The test shall be performed within 90 days of startup in the case of a new source.

(iii) The Department shall be notified at least 30 days prior to an emission test, so that it may at its option observe the test.

(iv) Samples shall be taken over such a period or periods as are necessary to determine accurately the maximum emissions which will occur in a 24-hour period. No changes shall be made in the operation which would potentially increase emissions above the level determined by the most recent stack test, until the new emission level has been estimated by calculation and the results reported to and approved by the District.

(v) All samples shall be analyzed, and mercury emissions shall be determined within 30 days after the stack test. Each determination shall be reported to the District by a registered letter dispatched before the close of the next business day following such determination.

(vi) Records of emission test results and other data needed to determine total emissions shall be obtained at the source and shall be made available for inspection by the District for a minimum of 2 years.

SECTION 5. SLUDGE SAMPLING

(a) As an alternative means for demonstrating compliance with (b) of section 3, an owner or operator may use Method 105 of Appendix B to 40 CFR 61 and the procedures specified in this section.

(i) A sludge test shall be conducted within 90 days of the classification date of this regulation in the case of an existing source.

(ii) A sludge test shall be conducted within 90 days of startup in the case of a new source.

(b) The District shall be notified at least 30 days prior to a sludge sampling test, so that it may at its option observe the test.

(c) Sludge shall be sampled according to paragraph (i) of this subsection, sludge charging rate for the plant shall be determined according to paragraph (ii) of this subsection, and the sludge analysis shall be performed according to paragraph (iii) of this subsection.

(i) The sludge shall be sampled after dewatering and before incineration or drying, at a location that provides a representative sample of the sludge that is charged to the incinerator or dryer. Eight consecutive grab samples shall be obtained at intervals of between 45 and 60 minutes and thoroughly mixed into one sample. Each of the eight grab samples shall have a volume of at least 200 ml but not more than 400 ml. A total of three composite samples shall be obtained within an operating period of 24 hours. When the 24-hour operating period is not continuous, the total sampling period shall not exceed 72 hours after the first grab sample is obtained. Samples shall not be exposed to any condition that may result in mercury contamination or loss.

(ii) The maximum 24-hour period sludge incineration or drying rate shall be determined by use of a flow rate measurement device that can measure the mass rate of sludge charged to the incinerator or dryer with an accuracy of ± 5 percent over its operating range. Other methods of measuring sludge mass charging rates may be used if they have received prior approval by the District.

(iii) The handling, preparation, and analysis of sludge samples shall be accomplished according to Method 105 in Appendix B to 40 CFR 61.

(d) Mercury emissions shall be determined by use of the following equation:

$Ehg = (0.001)\ (c)\ (Q)$

where

Ehg = Mercury emissions, g/day

c = Mercury concentration in the sludge on a dry solids basis, ug/g (ppm)

Q = Sludge charging rate, kg/day

(e) No changes in the operation of a plant shall be made after a sludge test has been conducted which would potentially increase emissions above the level determined by the most recent sludge test, until the new emission level has been estimated by calculation and the results reported to and approved by the District.

(f) All sludge samples shall be analyzed for mercury content within 30 days after the sludge sample is collected. Each determination shall be reported to the District by a registered letter dispatched before the close of the next business day following such determination.

(g) Records of sludge sampling, charging rate determination and other data needed to determine mercury content of wastewater treatment plant sludges shall be retained at the source and made available for inspection by the District for a minimum of 2 years.

SECTION 6. MONITORING

(a) All such sources for which mercury emissions exceed 1600 g/day, demonstrated either by stack sampling according to section 4 of this regulation or sludge sampling according to section 5 of this regulation, shall monitor mercury emissions at intervals of at least once per year by use of Method 105 of Appendix B to 40 CFR 61, or the procedures specified in (c) and (d) of section 5. The results of monitoring shall be reported and retained according to paragraphs (v) and (vi) of (d) of section 4 of this regulation or (f) and (g) of section 5 of this regulation.

REGULATION 5.07 EMISSION STANDARD FOR BERYLLIUM ROCKET MOTOR FIRING

SECTION 1. APPLICABILITY

The provisions of this section are applicable to rocket motor test sites.

SECTION 2. DEFINITIONS

For the purpose of this section:

(a) "Rocket motor test site" means any building, structure, facility or installation where the static test firing of a beryllium rocket motor and/or the disposal of beryllium propellant is conducted.

(b) Terms used in this section not defined herein shall have the meaning given to them in Regulation 1.02 and Regulation 5.02.

SECTION 3. EMISSION STANDARD

(a) Emissions to the atmosphere from rocket-motor test sites shall not cause time-weighted atmospheric concentrations of beryllium to exceed 75 microgram minutes per cubic meter of air within the limits of 10 to 60 minutes, accumulated during any 2 consecutive weeks, in any area in which an effect adverse to public health could occur.

(b) If combustion products from the firing of beryllium propellant are collected in a closed tank, emissions from such tank shall not exceed 2 grams per hour and a maximum of 10 grams per day.

SECTION 4. EMISSION TESTING: ROCKET FIRING OR PROPELLANT DISPOSAL

(a) Ambient air concentrations shall be measured during and after firing of a rocket motor or propellant disposal and in such a manner that the effect of these emissions can be compared with the standard. Such sampling techniques shall be approved by the District.

(b) All samples shall be analyzed and results shall be calculated within 30 days after samples are taken and before any subsequent rocket motor firing or propellant disposal at the given site. All results shall be reported to the District by a registered letter dispatched before the close of the next business day following determination of such results.

(c) Records of air sampling test results and other data needed to determine integrated intermittent concentrations shall be retained at the source and made available for inspection by the District for a minimum of 2 years.

(d) The District shall be notified at least 30 days prior to an air sampling test so that it may, at its option, observe the test.

SECTION 5. STACK SAMPLING

(a) Sources subject to section 3 (b) shall be continuously sampled during release of combustion products from the tank in such a manner that compliance with the standards can be determined.

(b) All samples shall be analyzed and beryllium emissions shall be determined within 30 days after samples are taken and before any subsequent rocket motor firing or propellant disposal at the given site. All determinations shall be reported to the District by a registered letter dispatched before the close of the next business day following such determination.

(c) Records of emission test results and other data needed to determine total emisisons shall be retained at the source and made available for inspection by the District for a minimum of 2 years.

REGULATION 5.08 EMISSION STANDARD FOR VINYL CHLORIDE

SECTION 1. APPLICABILITY

(a) The provisions of this section are applicable to plants which produce:

(i) Ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene,

(ii) Vinyl chloride by any process, and/or

(iii) One or more polymers containing any fraction of polymerized vinyl chloride.

(b) The provisions of this section are not applicable to equipment used in research and development if the reactor used to polymerize the vinyl chloride processed in the equipment has a capacity of no more than 0.19 m^3 (50 gal).

(c) Sections of this regulation other than 5 (b) (i), (c), (d), and (e) do not apply to equipment used in research and development if the reactor used to polymerize the vinyl chloride processed in the equipment has a capacity of greater than 0.19 m^3 (50 gal) and no more than 4.07 m^3 (1100 gal).

SECTION 2. DEFINITIONS

For the purpose of this section:

(a) "Grade of resin" means the subdivision of resin classification which describes it as a unique resin, i.e., the most exact description of a resin with no further subdivision.

(b) "Inprocess wastewater" means any water which during manufacturing or processing, comes into direct contact with vinyl chloride or polyvinyl chloride or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product containing vinyl chloride or polyvinyl chloride but which has not been discharged to a wastewater treatment process or discharged untreated as wastewater.

(c) "In vinyl chloride service" means that a piece of equipment contains or contacts either a liquid that is at least 10 percent by weight vinyl chloride or a gas that is at least 10 percent by volume vinyl chloride.

(d) "Reactor opening loss" means the emissions of vinyl chloride occurring when a reactor is vented to the atmosphere for any purpose other than an emergency relief discharge as defined in section 6 (b).

(e) "Slip gauge" means a gauge which has a probe that moves through the gas/liquid interface in a storage or transfer vessel and indicates the level of vinyl chloride in the vessel by the physical state of the material the gauge discharges.

(f) "Stripper" includes any vessel in which residual vinyl chloride is removed from polyvinyl chloride resin, except bulk resin, in the slurry form by the use of heat and/or vacuum. In the case of bulk resin, stripper includes any vessel which is used to remove residual vinyl chloride from polyvinyl chloride resin immediately following the polymerization step in the plant process flow.

(g) "Type of resin" means the broad classification of resin referring to the basic manufacturing process for producing that resin, including, but not limited to, the suspension, dispersion, latex, bulk, and solution processes.

(h) "Wastewater treatment process" includes any process which modifies characteristics such as BOD, COD, TSS, and pH, usually for the purpose of meeting effluent guidelines and standards; it does not include any process the purpose of which is to remove vinyl chloride from water to meet requirements of this section.

(i) Terms used in this section not defined herein shall have the meaning given to them in Regulation 1.02 and Regulation 5.02.

SECTION 3. EMISSION STANDARD FOR ETHYLENE DICHLORIDE PLANTS

(a) An owner or operator of an ethylene dichloride plant shall comply with the requirements of this section and section 6.

(b) Ethylene dichloride purification: The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from any equipment used in ethylene dichloride purification is not to exceed 10 ppm, except as provided in section 6 (b). This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in section 6 (c) before being opened.

(c) Oxychlorination reactor: Except as provided in section 6 (b), emissions of vinyl chloride to the atmosphere from each oxychlorination reactor are not to exceed 0.2 g/kg the 100 percent ethylene dichloride product from the oxychlorination process.

SECTION 4. EMISSION STANDARD FOR VINYL CHLORIDE PLANTS

(a) An owner or operator of a vinyl chloride plant shall comply with the requirements of this subsection and section 6.

(b) Vinyl chloride formation and purification: The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from any equipment used in vinyl chloride formation and/or purification is not to exceed 10 ppm, except as provided in section 6 (b). This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in section 6 (c) (vi) a. before being opened.

SECTION 5. EMISSION STANDARD FOR POLYVINYL CHLORIDE PLANTS

(a) An owner or operator of a polyvinyl chloride plant shall comply with the requirements of this section and section 6.

(b) Reactor: The following requirements apply to reactors:

(i) The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from each reactor is not to exceed 10 ppm, except as provided in paragraph (b) (ii) and section 6 (b).

(ii) The reactor opening loss from each reactor is not to exceed 0.02 g vinyl chloride/Kg (0.00002 lb vinyl chloride/lb) of polyvinyl chloride product, with the product determined on a dry solids basis. This requirement applies to any vessel which is used as a reactor or as both a reactor and a stripper. In the bulk process, the product means the gross product of prepolymerization and postpolymerization.

(iii) Manual vent valve discharge: Except for an emergency manual vent valve discharge, there is to be no discharge to the atmosphere from any manual vent valve on a polyvinyl chloride reactor in vinyl chloride service. An emergency manual vent valve discharge means a discharge to the atmosphere which could not have been avoided by taking measures to prevent the discharge. Within 10 days of any discharge to the atmosphere from any manual vent valve, the owner or operator of the source from which the discharge occurs shall submit to the District a report in writing containing information on the source, nature and cause of the discharge, the date and time of the discharge, the approximate total vinyl chloride loss during the discharge, the method used for determining the vinyl chloride loss, the action that was taken to prevent the discharge, and measures adopted to prevent future discharges.

(c) Stripper: The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from each stripper is not to exceed 10 ppm, except as provided in section 6 (b). This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in section 6 (c) (vi) a. before being opened.

(d) Mixing, weighing, and holding containers: The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from each mixing, weighing, or holding container in vinyl chloride service which precedes the stripper (or the reactor if the plant has no stripper) in the plant process flow is not to exceed 10 ppm, except as provided in section 6 (b). This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in section 6 (c) (vi) a. before being opened.

(e) Monomer recovery system: The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from each monomer recovery system is not to exceed 10 ppm, except as provided in section 6 (b). This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in section 6 (c) (vi) a. before being opened.

(f) Sources following the stripper(s): The following requirements apply to emissions of vinyl chloride to the atmosphere from the combination of all sources following the stripper(s) [or the reactor(s) if the plant has no stripper(s)] in the plant process flow including but not limited to, centrifuges, concentrators, blend tanks, filters, dryers, conveyor air discharges, baggers, storage containers, and inprocess wastewater:

(i) In polyvinyl chloride plants using stripping technology to control vinyl chloride emissions, the weighted average residual vinyl chloride concentration in all grades of polyvinyl chloride resin processed through the stripping operation on each calendar day, measured immediately after the stripping operation is completed, may not exceed:

a. 2000 ppm for polyvinyl chloride dispersion resins, excluding latex resins;

b. 400 ppm for all other polyvinyl chloride resins, including latex resins, averaged separately for each type of resin; or

(ii) In polyvinyl chloride plants controlling vinyl chloride emissions with technology other than stripping or in addition to stripping, emissions of vinyl chloride to the atmosphere may not exceed:

a. 2 g/kg (0.002 lb/lb) product from the stripper(s) [or reactor(s) if the plant has no stripper(s)] for dispersion polyvinyl chloride resins, excluding latex resins, with the product determined on a dry solids basis;

b. 0.4 g/kg (0.0004 lb/lb) product from the strippers [or reactor(s) if the plant has no stripper(s)] for all other polyvinyl chloride resins, including latex resins, with the product determined on a dry solids basis.

SECTION 6. EMISSION STANDARD FOR ETHYLENE DICHLORIDE, VINYL CHLORIDE AND POLYVINYL CHLORIDE PLANTS

(a) An owner or operator of an ethylene dichloride, vinyl chloride, and/or polyvinyl chloride plant shall comply with the requirements of this subsection.

(b) Relief valve discharge: Except for an emergency relief discharge, there is to be no discharge to the atmosphere from any relief valve on any equipment in vinyl chloride service. An emergency relief discharge means a discharge which could not have been avoided by taking measures to prevent the discharge. Within 10 days of any relief valve discharge, the owner or operator of the source from which the relief valve discharge occurs shall submit to the District a report in writing containing information on the source, nature and cause of the discharge, the date and time of the discharge, the approximate total vinyl chloride loss during the discharge, the method used for determining the vinyl chloride loss, the action that was taken to prevent the discharge, and measures adopted to prevent future discharges.

(c) Fugitive emission sources:

(i) Loading and unloading lines: Vinyl chloride emissions from loading and unloading lines which are opened to the atmosphere after each loading or unloading operation are to be minimized as follows:

a. After each loading or unloading operation and before opening a loading or unloading line to the atmosphere, the quantity of vinyl chloride in all parts of each loading or unloading line that are to be opened to the atmosphere is to be reduced so that the parts combined contain no greater than 0.0038 m^3 (0.13 ft^3) of vinyl chloride, as standard temperature and pressure; and

b. Any vinyl chloride removed from a loading or unloading line in accordance with paragraph (c) (i) a. is to be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm, or equivalent as provided in section 7.

(ii) Slip gauges: During loading or unloading operations, the vinyl chloride emissions from each slip gauge in vinyl chloride service are to be minimized by ducting any vinyl chloride discharged from the slip gauge through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm, or equivalent as provided in section 7.

(iii) Leakage from pump, compressor, and agitator seals:

a. Rotating pumps: Vinyl chloride emissions from seals on all rotating pumps in vinyl chloride service are to be minimized by installing sealless pumps, pumps with double mechanical seals, or equivalent as provided in section 7. If double mechanical seals are used, vinyl chloride emission from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the pump; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in section 7.

b. Reciprocating pumps: Vinyl chloride emissions from seals on all reciprocating pumps in vinyl chloride service are to be minimized by installing double outboard seals, or equivalent as provided in section 7. If double outboard seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the pump; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm, or equivalent as provided in section 7.

c. Rotating compressors: Vinyl chloride emissions from seals on all rotating compressors in vinyl chloride service are to be minimized by installing compressors with double mechanical seals, or equivalent as provided in section 7. If double mechanical seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the compressor; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in section 7.

d. Reciprocating compressors: Vinyl chloride emissions from seals on all reciprocating compressors in vinyl chloride service are to be minimized by installing double outboard seals, or equivalent as provided in section 7. If double outboard seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the compressor; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in section 7.

e. Agitator: Vinyl chloride emissions from seals on all agitators in vinyl chloride service are to be minimized by installing agitators with double mechanical seals, or equivalent as provided in section 7. If double mechanical seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the agitated vessel; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in section 7.

(iv) Leakage from relief valves: Vinyl chloride emissions due to leakage from each relief valve on equipment in vinyl chloride service are to be minimized by installing a rupture disk between the equipment and the relief valve, by connecting the relief valve discharge to a process line or recovery system, or equivalent as provided in section 7.

(v) Manual venting of gases: Except as provided in section 5 (b) (iii), all gases which are manually vented from equipment in vinyl chloride service are to be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in section 7.

(vi) Opening of equipment: Vinyl chloride emissions from opening of equipment (including loading or unloading lines that are not opened to the atmosphere after each loading or unloading operation) are to be minimized as follows:

a. Before opening any equipment for any reason, the quantity of vinyl chloride is to be reduced so that the equipment contains no more than 2.0 percent by volume vinyl chloride or 0.0950 m^3 (25 gal) of vinyl chloride, whichever is larger, at standard temperature and pressure; and

b. Any vinyl chloride removed from the equipment in accordance with paragraph (c) (vi) a. is to be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm, or equivalent as provided in section 7.

(vii) Samples: Unused portions of samples containing at least 10 percent by weight vinyl chloride are to be returned to the process, and sampling techniques are to be such that sample containers in vinyl chloride service are purged into a closed process system.

(viii) Leak detection and elimination: Vinyl chloride emissions due to leaks from equipment in vinyl chloride service are to be minimized by instituting and implementing a formal leak detection and elimination program. The owner or operator shall submit a description of the program to the District for approval. The program is to be submitted within 45 days of the effective date of these regulations, unless a waiver of compliance is granted. If a waiver of compliance is granted, the program is to be submitted on a date scheduled by the District. Approval of a program will be granted by the District provided it finds:

a. It includes a reliable and accurate vinyl chloride monitoring system for detection of major leaks and identification of the general area of the plant where a leak is located. A vinyl chloride monitoring system means a device which obtains air samples from one or more points on a continuous sequential basis and analyzes the samples with gas chromatography or, if the owner or operator assumes that all hydrocarbons measured are vinyl chloride, with infrared spectrophotometry flame ion detection, or an equivalent or alternative method.

b. It includes a reliable and accurate portable hydrocarbon detector to be used routinely to find small leaks and to pinpoint the major leaks indicated by the vinyl chloride monitoring system. A portable hydrocarbon detector means a device which measures hydrocarbons with a sensitivity of at least 10 ppm and is of such design and size that it can be used to measure emissions from localized points.

c. It provides for an acceptable calibration and maintenance schedule for the vinyl chloride monitoring system and portable hydrocarbon detector. For the vinyl chloride monitoring system, a daily span check is to be conducted with a concentration of vinyl chloride equal to the concentration defined as a leak according to paragraph (c) (viii) f. The calibration is to be done with either:

1. A calibration gas mixture prepared from the gases specified in Sections 5.2.1 and 5.2.3 of EPA Test Method 106, and in accordance with Section 7.1 of EPA Test Method 106 in Appendix B of 40 CFR 61, or

2. A calibration gas cylinder containing the appropriate concentration of vinyl chloride. The gas composition of the calibration gas cylinder standard is to have been certified by the manufacturer. The manufacturer must have recommended a maximum shelf life for each cylinder so that the concentration does not change greater than ± 5% from the certified value. The date of gas cylinder preparation, certified vinyl chloride concentration, and recommended maximum shelf life, must have been affixed to the cylinder before shipment from the manufacturer to the buyer. If a gas chromatograph is used as the vinyl chloride monitoring system, these gas mixtures may be directly used to prepare a chromatograph calibration curve as described in Section 7.3 of EPA Test Method 106. The requirements in Sections 5.2.3.1 and 5.2.3.2 of EPA Test Method 106 for certification of cylinder standards and for establishment and verification of calibration standards are to be followed.

d. The location and number of points to be monitored and the frequency of monitoring provided for in the program are acceptable when they are compared with the number of pieces of equipment in vinyl chloride service and the size and physical layout of the plant.

e. It contains an acceptable plan of action to be taken when a leak is detected.

f. It contains a definition of leak which is acceptable when compared with the background concentrations of vinyl chloride in the areas of the plant to be monitored by the vinyl chloride monitoring system. Measurements of background concentrations of vinyl chloride in the areas of the plant to be monitored by the vinyl chloride monitoring system are to be included with the description of the program. The definition of leak for a given plant may vary among the different areas within the plant and is also to change over time as background concentrations in the plant are reduced.

(ix) Inprocess Wastewater: Vinyl chloride emissions to the atmosphere from inprocess wastewater are to be reduced as follows:

a. The concentration of vinyl chloride in each inprocess wastewater stream containing greater than 10 ppm vinyl chloride measured immediately as it leaves a piece of equipment and before being mixed with any other inprocess wastewater stream is to be reduced to no more than 10 ppm by weight before being mixed with any other inprocess wastewater stream which contains less than 10 ppm vinyl chloride, before being exposed to the atmosphere, before being discharged to a wastewater treatment process, or before being discharged untreated as a wastewater. This paragraph does apply to water which is used to displace vinyl chloride from equipment before it is opened to the atmosphere in accordance with section 5 (b) (ii) or paragraph (c) (vi) of this subsection, but does not apply to water which is used to wash out equipment after the equipment has already been opened to the atmosphere in accordance with section 5 (b) (ii) or paragraph (c) (vi) of this subsection.

b. Any vinyl chloride removed from the inprocess wastewater in accordance with paragraph (c) (ix) a. is to be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm, or equivalent as provided in section 7.

(d) The requirements in paragraphs (c) (i), (c) (ii), (c) (v), (c) (vi), (c) (vii), and (c) (viii) of this section are to be incorporated into a standard operating procedure and made available upon request for inspection by the District. The standard operating procedure is to include provisions for measuring the vinyl chloride in equipment $\geq$ 4.75 m^3 (1,250 gal) in volume for which an emission limit is prescribed in section 6 (c) (vi) a. prior to opening the equipment and using EPA Test Method 106, a portable hydrocarbon detector, or an equivalent or alternative method. The method of measurement is to meet the requirements in section 8 (g) (v) a. 1. or (g) (v) a. 2.

SECTION 7. EQUIVALENT EQUIPMENT AND PROCEDURES

Upon written application from an owner or operator, the District may approve use of equipment or procedures which have been demonstrated to its satisfaction to be equivalent in terms of reducing vinyl chloride emissions to the atmosphere to those prescribed for compliance with a specific subsection of this section. For an existing source, any request for using an equivalent method as to the initial measure of control is to be submitted to the District within 30 days of the effective date. For a new source, any request for using an equivalent method is to be submitted to the District with the application for approval of construction or modification.

SECTION 8. EMISSION TESTS

(a) Unless a waiver of emission testing is obtained, the owner or operator of a source to which this section applies shall test emissions from the source,

(i) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date, or

(ii) Within 90 days of startup in the case of a new source, initial startup of which occurs after the effective date.

(b) The owner or operator shall provide the District at least 30 days prior notice of an emission test to afford the District the opportunity to have an observer present during the test.

(c) Any emission test is to be conducted while the equipment being tested is operating at the maximum production rate at which the equipment will be operated and under other relevant conditions as may be specified by the District based on representative performance of the source.

(d) Each emission test is to consist of three runs. For the purpose of determining emissions, the average of results of all runs is to apply. The average is to be computed on a time weighted basis.

(e) All samples are to be analyzed within 24 hours, and vinyl chloride emissions are to be determined within 30 days after the emission test. The owner or operator shall report the determinations to the District by a registered letter dispatched before the close of the next business day following the determination.

(f) The owner or operator shall retain at the plant and make available, upon request, for inspection by the District for a minimum of 2 years records of emission test results and other data needed to determine emissions.

(g) Unless otherwise specified, the owner or operator shall use EPA Test Methods for each test as required by paragraphs (g) (i), (g) (ii), (g) (iii), (g) (iv), and (g) (v), unless an equivalent method or an alternative method has been approved by the District. If the District finds reasonable grounds to dispute the results obtained by an equivalent or alternative method, it may require the use of a reference method. If the results of the reference and equivalent or alternative methods do not agree, the results obtained by the reference method prevail, and the District may notify the owner or operator that approval of the method previously considered to be equivalent or alternative is withdrawn.

(i) EPA Test Method 106 is to be used to determine the vinyl chloride emissions from any source for which an emission limit is prescribed in section 3 (b) or (c), section 4 (b), or 5 (b) (i), (c), (d), or (e), or from any control system to which reactor emissions are required to be ducted in section 5 (b) (ii) or to which fugitive emissions are required to be ducted in section 6 (c) (i) b., (c) (ii), (c) (v), (c) (vi) b., or (c) (ix) b.

a. For each run, one sample is to be collected. The sampling site is to be at least two stack or duct diameters downstream and one half diameter upstream from any flow disturbance such as a bend, expansion, contraction, or visible flame. For a rectanglar cross section, an equivalent diameter is to be determined from the following equation:

$$\text{equivalent diameter} = 2\,\frac{(\text{length})\ (\text{width})}{\text{length} + \text{width}}$$

The sampling point in the duct is to be at the centroid of the cross section. The sample is to be extracted at a rate proportional to the gas velocity at the sampling point. The sample is to be taken over a minimum of one hour and is to contain a minimum volume of 50 liters corrected to standard conditions.

b. Each emission test is to consist of three runs. For the purpose of determining emissions, the average of results of all runs is to apply. The average is to be computed on a time weighted basis.

c. For gas streams containing more than 10 percent oxygen, the concentration of vinyl chloride as determined by EPA Test Method 106 is to be corrected to 10 percent oxygen for determination of emissions by using the following equation:

$$C_b\ (\text{corrected}) = C_b\ \frac{10.9}{20.9 - \text{percent } O_2}$$

Where:

C_b (corrected) = The concentration of vinyl chloride in the exhaust gases, corrected to 10 percent oxygen

C_b = The concentration of vinyl chloride as measured by EPA Test Method 106

20.9 = Percent oxygen in the ambient air at standard conditions

10.9 = Percent oxygen in the ambient air at standard conditions minus the 10 percent oxygen to which the correction is being made

Percent O_2 = Percent oxygen in the exhaust gas as measured by Reference Method 3 in Appendix A of Part 40 CFR 60.

d. For those emission sources where the emission limit is prescribed in terms of mass rather than concentration, mass emissions in kg/100 kg product are to be determined by using the following equation:

$$C_{BX} = \frac{[C_b\ (2.60)\ Q\ 10^{-6}]\ [100]}{Z}$$

Where:

C_{BX} = kg vinyl chloride/100 kg product

C_b = The concentration of vinyl chloride as measured by EPA Test Method 106

2.60 = Density of vinyl chloride at one atmosphere and 20° C in kg/m^3

Q = Volumetric flow rate in m^3/hr as determined by Reference Method 2 of Appendix A to 40 CFR Part 60

10^{-6} = Conversion factor for ppm

Z = Production rate (kg/hr).

(ii) EPA Test Method 107 is to be used to determine the concentration of vinyl chloride in each inprocess wastewater stream for which an emission limit is prescribed in section 6 (c) (ix) a.

(iii) Where a stripping operation is used to attain the emission limit in section 5 (f), emissions are to be determined using EPA Test Method 107 as follows:

a. The number of strippers and samples and the types and grades of resin to be sampled are to be determined by the District for each individual plant at the time of the test based on the plant's operation.

b. Each sample is to be taken immediately following the stripping operation.

c. The corresponding quantity of material processed by each stripper is to be determined on a dry solids basis and by a method submitted to and approved by the District.

d. At the prior request of the District, the owner or operator shall provide duplicates of the samples required in paragraph (g) (iii) a. of this section.

(iv) Where control technology other than or in addition to a stripping operation is used to attain the emission limit in section 5 (f), emissions are to be determined as follows:

a. EPA Test Method 106 is to be used to determine atmospheric emissions from all of the process equipment simultaneously. The requirements of paragraph (g) (i) of this section are to be met.

b. EPA Test Method 107 is to be used to determine the concentration of vinyl chloride in each inprocess wastewater stream subject to the emission limit prescribed in section 5 (f). The mass of vinyl chloride in kg/100 kg product in each inprocess wastewater stream is to be determined by using the following equation:

$$C_{BX} = \frac{[C_d\ R\ 10^{-6}]\ [100]}{Z}$$

Where:

C_{BX} = kg vinyl chloride/100 kg product

C_d = the concentration of vinyl chloride as measured by EPA Test Method 107.

R = water flow rate in l/hr determined in accordance with a method which has been submitted to and approved by the District

10^{-6} = conversion factor for ppm.

Z = production rate (kg/hr), determined in accordance with a method which has been submitted and approved by the District.

(v) The reactor opening loss for which an emission limit is prescribed in section 5 (b) (ii) is to be determined. The number of reactors for which the determination is to be made is to be specified by the District for each individual plant at the time of the determination based on the plant's operation. For a reactor that is also used as a stripper, the determination may be made immediately following the stripping operation.

a. Except as provided in paragraph (g) (v) b. of this section, the reactor opening loss is to be determined using the following equation:

$$C = \frac{W\ (2.60)\ (10^{-6})\ (C_b)}{YZ}$$

Where:

C = kg vinyl chloride emissions/kg product

W = capacity of the reactor in m^3

2.60 = density of vinyl chloride at one atmosphere and 20° C in kg/m^3

10^{-6} = conversion factor for ppm

C_b = ppm by volume vinyl chloride as determined by EPA Test Method 106 or a portable hydrocarbon detector which measures hydrocarbons with a sensitivity of at least 10 ppm

Y = number of batches since the reactor was last opened to the atmosphere

Z = average kg of polyvinyl chloride produced per batch in the number of batches since the reactor was last opened to the atmosphere.

1. If EPA Method 106 is used to determine the concentration of vinyl chloride (C_b), the sample is to be withdrawn at a constant rate with a probe of sufficient length to reach the vessel bottom from the manhole. Samples are to be taken for 5 minutes within 6 inches of the vessel bottom, 5 minutes near the vessel center, and 5 minutes near the vessel top.

2. If a portable hydrocarbon detector is used to determine the concentration of vinyl chloride (C_b), a probe of sufficient length to reach the vessel bottom from the manhole is to be used to make the measurements. One measurement will be made within 6 inches of the vessel bottom,

one near the vessel center and one near the vessel top. Measurements are to be made at each location until the reading is stabilized. All hydrocarbons measured are to be assumed to be vinyl chloride.

3. The production rate of polyvinyl chloride (Z) is to be determined by a method submitted to and approved by the District.

b. A calculation based on the number of evacuations, the vacuum involved, and the volume of gas in the reactor is hereby approved by the District as an alternative method for determining reactor opening loss for postpolymerization reactors in the manufacture of bulk resins.

SECTION 9. EMISSION MONITORING

(a) A vinyl chloride monitoring system is to be used to monitor on a continuous basis the emissions from the sources for which emission limits are prescribed in sections 3 (b) and (c), 4 (b), and 5 (b) (i), (c), (d) and (e), and for any control system to which reactor emissions are required to be ducted in section 5 (b) (ii), or to which fugitive emissions are required to be ducted in section 6 (c) (i) b., and (c) (ii), (c) (v), (c) (vi) b., and (c) (ix) b.

(b) The vinyl chloride monitoring system(s) used to meet the requirement in paragraph (a) is to be a device which obtains air samples from one or more points on a continuous sequential basis and analyzes the samples with gas chromotography or, if the owner or operator assumes that all hydrocarbons measured are vinyl chloride, with infrared spectrophotometry, flame ion detection, or an equivalent or alternative method. The vinyl chloride monitoring system used to meet the requirements in section (6) (c) (viii) a. may be used to meet the requirements of this subsection.

(c) A daily span check is to be conducted for each vinyl chloride monitoring system used. For all of the emission sources listed in subsection (a) of this section except the one for which an emission limit is prescribed in section 3 (c), the daily span check is to be conducted with a concentration of vinyl chloride equal to 10 ppm. For the emission source for which an emission limit is prescribed in section 3 (c), the daily span check is to be conducted with a concentration of vinyl chloride which is determined to be equivalent to the emission limit for that source based on the emission test required by 40 CFR 67.67. The calibration is to be done with either:

(i) A calibration gas mixture prepared from the gases specified in sections 5.2.1 and 5.2.3 of EPA Test Method 106, or

(ii) A calibration gas cylinder containing the appropriate concentration of vinyl chloride. The gas composition of the calibration gas cylinder standard is to have been certified by the manufacturer. The manufacturer must have recommended a maximum shelf life for each cylinder so that the concentration does not change greater than ± 5% from the certified value. The date of gas cylinder preparation, certified vinyl chloride concentration, and recommended maximum shelf life must have been affixed to the cylinder before shipment from the manufacturer to the buyer. If a gas chromatograph is used as the vinyl chloride monitoring system, these gas mixtures may be directly used to prepare a chromatograph calibration curve as described in Section 7.3 of EPA Test Method 106. The requirements in Sections 5.2.3.1 and 5.2.3.2 of EPA Test Method 106 for certification of cylinder standards and for establishment and verification of calibration standards are to be followed.

SECTION 10. INITIAL REPORT

(a) An owner or operator of any source to which this section applies shall submit a statement in writing notifying the District that the equipment and procedural specifications in sections 6 (c) (i), (c) (ii), (c) (iii), (c) (iv), (c) (v), (c) (vi), (c) (vii), and (c) (viii) are being implemented.

(b) (i) In the case of an existing source or a new source which has an initial startup date preceding the effective date, the statement is to be submitted within 90 days of the effective date, unless a waiver of compliance is granted along with the information required under 40 CFR 61.10. If a waiver of compliance is granted, the statement is to be submitted on a date scheduled by the District.

(ii) In the case of a new source which did not have an initial startup date preceding the effective date, the statement is to be submitted within 90 days of the initial starting date.

(c) The statement is to contain the following information:

(i) A list of the equipment installed for compliance;

(ii) A description of the physical and functional characteristics of each piece of equipment;

(iii) A description of the methods which have been incorporated into the standard operating procedures for measuring or calculating the emissions for which emission limits are prescribed in sections 6 (c) (i) a. and (c) (vi) a.; and

(iv) A statement that each piece of equipment is installed and that each piece of equipment and each procedure is being used.

SECTION 11. SEMIANNUAL REPORT

(a) The owner or operator of any source to which this section applies shall submit to the District on September 15 and March 15 of each year a report in writing containing the information required by this subsection. The first semiannual report is to be submitted following the first full 6 month reporting period after the initial report is submitted.

(b) (i) In the case of an existing source, or a new source which has an initial startup date preceding the effective date, the first report is to be submitted within 180 days of the effective date, unless a waiver of compliance is granted. If a waiver of compliance is granted, the first report is to be submitted on a date scheduled by the District.

(ii) For a new source with startup after the effective date, the first report is to be submitted within 180 days of the initial startup date.

(c) Unless otherwise specified, the owner or operator shall use EPA Test Methods 106 or 107 to conduct emission tests as required by paragraphs (c) (ii) and (c) (iii) of this section, unless an equivalent or an alternative method has been approved by the District. If the District finds reasonable grounds to dispute the results obtained by an equivalent or alternative method, it may require the use of a reference method. If the results of the reference and equivalent or alternative methods do not agree, the results obtained by the reference method prevail, and the District may notify the owner or operator that approval of the method previously considered to be equivalent or alternative is withdrawn.

(i) The owner or operator shall include in the report a record of any emissions which averaged over any hour period (commencing on the hour) are in excess of the emission limits prescribed in sections 3 (b) or (c), 4 (b), or 5 (b) (i), (c),(d), or (e), or for any control system to which reactor emissions are required to be ducted in section 5 (b) (ii), or to which fugitive emissions are required to be ducted in section 6 (c) (i) b., (c) (iii), (c) (v), (c) (vi) b., or (c) (ix) b. The emissions are to be measured in accordance with section 9.

(ii) In polyvinyl chloride plants for which a stripping operation is used to attain the emission level prescribed in section (5) (f), the owner or operator shall include in the report a record of the vinyl chloride content in the polyvinyl chloride resin. EPA Test Method 107 is to be used to determine vinyl chloride content as follows:

a. If batch stripping is used, one representative sample of polyvinyl chloride resin is to be taken from each batch of each grade of resin immediately following the completion of the stripping, and grade and the date and time the batch is completed. The corresponding quantity of material processed in each stripper batch is to be recorded and identified by resin type and grade and the date and time the batch is completed.

b. If continuous stripping is used, one representative sample of polyvinyl chloride resin is to be taken for each grade of resin processed or at intervals of 8 hours for each grade of resin which is being processed, whichever is more frequent.

The sample is to be taken as the resin flows out of the stripper and identified by resin type and grade and the date and time the sample was taken. The corresponding quantity of material processed by each stripper over the time period represented by the sample during the eight hour period is to be recorded and and identified by resin type and grade and the date and time it represents.

c. The quantity of material processed by the stripper is to be determined on a dry solids basis and by a method submitted to and approved by the District.

d. At the prior request of the District, the owner or operator shall provide duplicates of the samples required in paragraphs (c) (ii) a. and (c) (ii) b. of this section.

e. The report to the District by the owner or operator is to include the vinyl chloride content found in all the samples required in paragraphs (c) (ii) a. and (c) (ii) b. of this section, averaged separately for each type of resin, over each calendar day and weighted according to the quantity of each grade of resin processed by the stripper(s) that calendar day, according to the following equation:

$$A_{T_j} = \frac{\sum_{i=1}^{n} P_{G_i} M_{G_i}}{Q_{T_j}}$$

$$= \frac{P_{G_1} M_{G_1} + P_{G_2} M_{G_2} + \ldots + P_{G_n} M_{G_n}}{Q_{T_j}}$$

Where:

A = 24 hour average concentration of type T_j resin in ppm.

Q = Total production of type T_j resin over the 24-hour period, in kg.

T_j = Type of resin; $j = 1, 2, \ldots m$ where m is total number of resin types produced during the 24-hour period.

M = Concentration of vinyl chloride in one sample of grade G_i resin, in ppm.

P = Production of grade G_i resin represented by the sample, in kg.

G_i = Grade of resin, e.g., G_1, G_2 and G_3.

n = Total number of grades of resin produced during the 24-hour period.

f. The owner or operator shall retain at the source and make available for inspection by the District for a minimum of 2 years records of all data needed to furnish the information required by (c) (ii) e. of this section. The records are to contain the following information:

1. The vinyl chloride content found in all the samples required in paragraphs (c) (i) a. and (c) (ii) b. of this section identified by the resin type and grade and the time and date of the sample, and

2. The corresponding quantity of polyvinyl chloride resin processed by the stripper(s), identified by the resin type and grade and the time and date it represents.

(iii) The owner or operator shall include in the report a record of the emissions from each reactor opening for which an emission limit is prescribed in section 5 (b) (ii). Emissions are to be determined in accordance with section 8 (g) (v), except that emissions for each reactor are to be determined. For a reactor that is also used as a stripper, the determination may be made immediately following the stripping operation.

SECTION 12. RECORDKEEPING

(a) The owner or operator of any source to which this section applies shall retain the following information at the source and make it available for inspection by the District for a minimum of two years:

(i) A record of the leaks detected by the vinyl chloride monitoring system as required by section 6 (c) (viii), including the concentrations of vinyl chloride as measured, analyzed, and recorded by the vinyl chloride detector, the location of each measurement, and the date and approximate time of each measurement;

(ii) A record of the leaks detected during routine monitoring with the portable hydrocarbon detector and the action taken to repair the leaks as required by section 6 (c) (viii), including a brief statement explaining the location and cause of each leak detected with the portable hydrocarbon detector, the date and time of the leak and any action taken to eliminate that leak;

(iii) A record of emissions measured in accordance with section 9;

(iv) A daily operating record for each reactor, including pressures and temperatures;

(v) A record of relief valve discharges, including estimated weight loss of vinyl chloride, and a description of the abnormal incident.

REGULATION 6

STANDARDS OF PERFORMANCE FOR EXISTING AFFECTED FACILITIES

REGULATION 6.01 GENERAL PROVISIONS

SECTION 1. APPLICABILITY

Unless specifically exempted in Regulation 2.03, the provisions of this regulation shall apply to any affected facility not permitted under requirements of Regulation 7.

SECTION 2. PERMITS REQUIRED

All affected facilities under this regulation must have a permit pursuant to provisions of Regulation 2 which has been issued by the District.

SECTION 3. REPORTING REQUIREMENTS

The District may require the owner or operator to provide reports on emissions, equipment status, process information, in-stack emission monitoring, stack testing, fuels data and other relevant areas relating to permitted affected facilities in accordance with Regulation 2 and the provisions of this regulation.

SECTION 4. PERFORMANCE TESTS

The District may require affected facilities under this regulation to perform testing in accordance with Regulation 1.04.

REGULATION 6.02. EMISSION MONITORING FOR EXISTING SOURCES

SECTION 1.

This section defines the minimum requirements for continuous emission monitoring, recording, and reporting for source categories which are set forth. It includes the performance specifications for accuracy, reliability, and durability of acceptable monitoring systems and techniques to convert emission data to units of applicable emission standards. This section applies to source categories which were in being or had a construction permit issued by the District on or before the effective date of this regulation. The owner or operator of a source in a category listed below shall:

(a) Install, calibrate, operate and maintain all monitoring equipment necessary for continuously monitoring the pollutants specified in this section for the applicable source category; and

(b) Complete the installation and performance tests of such equipment and begin monitoring and recording within 18 months of the effective date of this regulation.

SECTION 2.

The source categories and the respective monitoring requirements are listed below:

(a) Indirect heat exchangers, as specified in paragraph (a) of section 6 of this regulation shall be monitored for opacity, sulfur dioxide emissions, and oxygen or carbon dioxide.

(b) Fluid bed catalytic cracking unit catalyst regenerators, as specified in paragraph (d) of section 6 of this regulation shall be monitored for opacity.

(c) Incinerators, as specified in paragraph (e) of section 6 of this regulation shall be monitored for opacity.

(d) Control devices, as specified in paragraph (f) of section 6 of this regulation shall be monitored for opacity.

SECTION 3. EXEMPTION

Sources which are scheduled for retirement within 5 years after the effective date of this regulation are exempt from the requirements of this section, provided that adequate evidence and guarantees are provided that clearly show that the source will cease operating on or before that date.

SECTION 4. EXTENSIONS

Reasonable extensions of the time provided for installation of monitors may be allowed for sources unable to meet the time-frame prescribed in paragraph 1 (b) of this regulation, provided the owner or operator of such facility demonstrates that good faith efforts have been made to obtain and install such devices within such prescribed time-frame.

SECTION 5. MONITORING SYSTEMS MALFUNCTIONS

The District may provide a temporary exemption from the monitoring and reporting requirements of this section during any period of monitoring system malfunction, provided that the source owner or operator shows, to the District's satisfaction, that the malfunction was unavoidable and is being repaired as expeditiously as practicable.

SECTION 6. MONITORING REQUIREMENTS

(a) Each indirect heat exchanger, except as provided in the following subparagraphs, with an annual average capacity factor of greater than 30 percent as demonstrated to the District by the owner or operator, shall conform with the following monitoring requirements when such facility is subject to an emission standard for the pollutant in question. (Annual average capacity factor means the ratio of the actual annual heat input to the potential annual heat input based on rated capacity.)

(1) A continuous monitoring system for the measurement of opacity which meets the appropriate performance specification as specified in section 7 of this regulation shall be installed, calibrated, maintained, and operated in accordance with the procedures of this subsection by the owner or operator of any such indirect heat exchanger of

greater than 250 million BTU per hour heat input except where: gaseous fuel is the only fuel burned, or oil or a mixture of gas and oil are the only fuels burned and the source is able to comply with the applicable particulate matter and opacity standards without utilization of particulate matter collection equipment, and where the source has never been found, through any administrative or judicial proceedings, to be in violation of any visible emission standard.

(ii) A continuous monitoring system for the measurement of sulfur dioxide which meets the appropriate performance specifications as specified in section 7 of this regulation shall be installed, calibrated, maintained, and operated on any indirect heat exchangers (except where natural gas or wood waste is burned) of greater than 250 million BTU per hour heat input.

(iii) A continuous monitoring system for the measurement of the percent oxygen or carbon dioxide which meets the appropriate performance specifications as specified in section 7 of this regulation shall be installed, calibrated, operated, and maintained on indirect heat exchangers where measurements of oxygen or carbon dioxide in the flue gas are required to convert either sulfur dioxide or nitrogen oxides continuous emission monitoring data, or both, to units of the emission standard.

(b) Fluid bed catalytic cracking unit catalyst regenerators at petroleum refineries. Each catalyst regenerator for fluid bed cracking units of greater than 8,000 barrels per day fresh feed capacity shall install, calibrate, maintain and operate a continuous monitoring system for the measurement of opacity which meets the appropriate performance specifications specified in section 7 of this regulation.

(c) Incinerators. Each incinerator with a charging capacity of more than 45 metric tons per day (50 tons/day) shall install, calibrate, maintain, and operate a continuous monitoring system for opacity which meets the specifications as specified in section 7 of this regulation.

(d) Each control device with a concentrated discharge associated with the affected facilities subject to regulation 6.11, shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of opacity which meet the appropriate performance specifications as specified in section 7 of this regulation.

SECTION 7.

Except as provided in section 8 of this regulation, all owners or operators which are required to comply with this section shall demonstrate compliance with the following performance specifications of Appendix B to 40 CFR 60.

(a) Continuous monitoring systems for measuring opacity shall comply with Performance Specification 1.

(b) Continuous monitoring systems for measuring sulfur dioxide shall comply with Performance Specification 2.

(c) Continuous monitoring systems for measuring nitrogen oxides shall comply with Performance Specification 2.

(d) Continuous monitoring systems for measuring oxygen shall comply with Performance Specification 3.

(e) Continuous monitoring systems for measuring carbon dioxide shall comply with Performance Specification 3.

SECTION 8.

An owner or operator who, prior to September 11, 1974, entered into a binding contractual obligation to purchase specific continuous monitoring system components or who installed continuous monitoring equipment prior to October 6, 1975 shall comply with the following requirements:

(a) Continuous monitoring systems for measuring opacity of emissions shall be capable of measuring emission levels within + 20 percent with a confidence level of 95 percent. The Calibration Error Test and associated calculation procedures set forth in Performance Specification 1 of Appendix B to 40 CFR 60 shall be used for demonstrating compliance with this specification;

(b) Continuous monitoring systems for measurement of nitrogen oxides or sulfur dioxide shall be capable of measuring emission levels within ± 20 percent with a confidence level of 95 percent. The Calibration Error Test, the Field Test for Accuracy (Relative), and associated operating and calbulation procedures set forth in Appendix B to 40 CFR 60 shall be used for demonstrating compliance with this specification;

(c) Owners or operators of all continuous monitoring systems installed on an affected facility prior to October 6, 1975, may be required to conduct tests under paragraphs (a) and/or (b) of this section if requested by the District.

(d) All continuous monitoring systems referenced by this section shall be upgraded or replaced (if necessary) with new continuous monitoring systems, and the new or improved systems shall be demonstrated to comply with applicable performance specifications within 5 years of the effective date of this regulation.

SECTION 9. CALIBRATION GASES

For sulfur dioxide monitoring systems installed on indirect heat exchangers or sulfuric acid plants, the pollutant gas used to prepare calibration gas mixtures (Section 2.1, Performance Specification 2, Appendix B CFR 60) shall be sulfur dioxide. For nitrogen oxides monitoring systems, installed on nitric acid plants, the pollutant gas used to prepare calibration gas mixture (Section 2.1, Performance Specification 2, Appendix B, 40 CFR 60) shall be nitrogen dioxide. This gas shall also be used for daily checks under section 13 of this regulation as applicable. Span and zero gases certified by their manufacturer to be traceable to National Bureau of Standards reference gases shall be used whenever these reference gases are available. Every 6 months from dates of manufacture, span and zero gases shall be reanalyzed by conducting triplicate analyses using the reference methods in Appendix A, 40 CFR 60 as follows: for sulfur dioxide, use Reference Method 6, for nitrogen dioxide use Reference Method 7, and for carbon dioxide and oxygen use Reference Method 3.

SECTION 10. CYCLING TIMES

Cycling times include the total time a monitoring system requires to sample, analyze, and record an emission measurement.

(a) Continuous monitoring systems for measuring opacity shall complete a minimum of one cycle of operation (sampling analyzing, and data recording) for each successive 10 second period.

(b) Continuous monitoring systems for measuring oxides of nitrogen, carbon dioxide, oxygen, or sulfur dioxide shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 5 minute period.

SECTION 11. MONITOR LOCATION

A continuous monitoring device shall be installed such that representative measurements of emissions or process parameters (i.e., oxygen, or carbon dioxide) from the affected facility are obtained. Additional guidance for for location of continuous monitoring systems to obtain representative samples are contained in the applicable Performance Specifications of Appendix B of 40 CFR 60.

SECTION 12. COMBINED EFFLUENTS

When the effluents from two or more affected facilities of similar design and operating characteristics are combined before being released to the atmosphere, the District may allow monitoring systems to be installed on the combined effluent. When the affected facilities are not of similar design and operating characteristics, or when the effluent from on affected facility is released to the atmosphere through more than one point, the District shall establish alternate procedures to implement the intent of these requirements.

SECTION 13. ZERO AND SPAN DRIFT

Owners or operators of all continuous monitoring systems installed in accordance with the requirements of this subsection shall record the zero and span drift in accordance with the method prescribed by the manufacturer of such instruments; to subject the instruments to the manufacturer's recommended zero and span check at least once daily unless the manufacturer has recommended adjustments at shorter intervals, in which case the recommendations shall be followed; to adjust the zero and span whenever the twenty-four (24) hour zero drift or twenty-four (24) hour calibration drift limits of the applicable performance specifications in Appendix B of 40 CFR 60 are exceeded; and to adjust continuous monitoring systems referenced by section 6 of this regulation whenever the twenty-four (24) hour zero drift or twenty-four (24) hour calibration drift exceeds a ten (10) percent of the emission standard.

SECTION 14. SPAN

Instrument span should be approximately 200 percent of the expected instrument data display output corresponding to the emission standard of the source.

SECTION 15. ALTERNATE PROCEDURES AND REQUIREMENTS

The District may allow equivalent procedures and requirements that have been approved by the U. S. Environmental Protection Agency for continuous monitoring systems under the following conditions:

(a) Alternate monitoring requirements to accommodate continuous monitoring systems that require corrections for stack moisture conditions (e.g., an instrument measuring sulfur dioxide emissions on a wet basis could be used with an instrument measuring oxygen concentration on a dry basis if acceptable methods of measuring stack moisture conditions are used to allow accurate adjustments of the measured sulfur dioxide concentration to a dry basis).

(b) Alternate locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate to the satisfaction of the District that installation at alternate locations will enable accurate and representative measurements.

(c) Alternative procedures for performing calibration checks (e.g., some instruments may demonstrate superior drift characteristics that require checking at less frequent intervals).

(d) Alternative monitoring requirements when the effluent from two or more identical affected facilities is released to the atmosphere through more than one point (e.g., and extractive, gaseous monitoring system used at several points may be approved if the procedures recommended are suitable for generating accurate emission averages).

(e) Alternate continuous monitoring systems that do not meet the spectral response requirements in Performance Specification 1, Appendix B of 40 CFR 60, but adequately demonstrate a definite and consistent relationship between their measurements and the opacity measurements of a system complying with the requirements in Performance Specification 1. The District may require that such demonstration be performed for each affected facility.

SECTION 16. MINIMUM DATA REQUIREMENTS

The following paragraphs set forth the minimum data reporting requirements. Both a printed summary and computer tape or cards shall be furnished in the format specified by the District.

(a) Owners or operators of facilities required to install continuous monitoring systems shall submit for every calendar quarter, a written report of excess emissions and the nature and cause of the excess emissions if known. The averaging period used for data reporting should correspond to the averaging period specified in the emission test method used to determine compliance with an emission standard for the pollutant/source category in question. The required report shall include, as a minimum, the data stipulated in this subsection. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter.

(b) For opacity measurements, the summary shall consist of the magnitude in actual percent opacity of six-minute averages of opacity greater than the opacity standard in the applicable standard for each hour of operation of the facility. Average values may be obtained by integration over the averaging period or by arithmetically averaging a minimum of four equally spaced, instantaneous opacity measurements per minute. Any time period exempted shall be considered before determining the excess average of opacity (e.g., whenever a regulation allows two minutes of opacity measurements in excess of the standard, the source shall report all opacity averages, in any one hour, in excess of the standard minus the two-minute exemption). If more than one opacity standard applies, excess emissions data must be submitted in relation to all such standards. Opacity data need be reported on computer cards or tape only.

(c) For gaseous measurements the summary shall consist of hourly averages in the units of the applicable standard. The hourly averages shall not appear in the written summary, but shall be made available from the computer tape or cards.

(d) The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustment shall be reported. Proof of continuous monitoring system performance whenever system repairs or adjustments have been made is required.

(e) When no excess emissions have occurred and the continuous monitoring system(s) have been inoperative, repaired, or adjusted, such information shall be included in the report.

(f) Owners or operators of affected facilities shall maintain a file of all information reported in the quarterly summaries, and all other data collected either by the continuous monitoring system or as necessary to convert monitoring data to the units of the applicable standard for a minimum of two years from the date of collection of such data or submission of such summaries.

SECTION 17.

Owners or operators of affected facilities shall use the following procedures for converting monitoring data to units of the standard necessary.

(a) For indirect heat exchangers the following procedures shall be used to convert gaseous emission monitoring data in parts per million to g/million cal. (lb/million BTU) where necessary:

(i) When the owner or operator of an indirect heat exchanger elects under subparagraph (iii) of paragraph (a) of section 6 of this regulation to measure oxygen in the flue gases, the measurements of the pollutant concentration and oxygen shall each be on a dry basis and converted per the following equation:

$$E = \frac{CF\ (20.9)}{(20.9 - \%O_2)}$$

Where E = pollutant emission, g/million cal (lb/million BTU)

C = pollutant concentration, g/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each hourly period by 4.16 x 10^{-5} g/dscm per ppm (2.64 x 10-9 M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64 for sulfur dioxide and 46 for oxides of nitrogen.

$\%O_2$ = Oxygen volume (expressed as percent)

F = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F). Values of "F" are given in Regulation 6.07.

(ii) When the owner or operator elects under subparagraph (iii) of paragraph (a) of section 6 of this regulation to measure carbon dioxide in the flue gases, the measurement of the pollutant concentration and the carbon dioxide concentration shall each be on a consistent basis (wet or dry) and converted per the following equation:

$$E = \frac{CF_c\ 100}{\%\ CO_2}$$

Where E = pollutant emission, g/million cal (lb/million BTU)

C = pollutant concentration, g/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each hourly period by 4.16 x 10-5 M g/dscm per ppm (2.64 x 10-9 M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64 for sulfur dioxide and 46 for oxides of nitrogen.

$\%CO_2$ = carbon dioxide volume (expressed as percent)

Fc = a factor representing a ratio of the volume of carbon dioxide generated to the calorific value of the fuel combusted (Fc) respectively. Values of Fc are given in Regulation 7.06 subsection 7 (d).

(b) The District may allow data reporting or reduction procedures varying from those set forth in this section if the owner or operator of a source shows to the satisfaction of the District that his procedures are at least as accurate as those in this subsection. Such procedures may include but are not limited to the following:

  (i) Alternative procedures for computing emission averages that do not require integration of data (e.g., some facilities may demonstrate that the variability of their emissions is sufficiently small to allow accurate reduction of data based upon computing averages from equally spaced data points over the averaging period).

  (ii) Alternative methods of converting pollutant concentration measurements to the units of the emission standards.

SECTION 18. SPECIAL CONSIDERATION

The District may provide for approval, on a case-by-case basis, of alternative monitoring requirements different from the provisions of this regulation if the provisions of this regulation (i.e., the installation of a continuous emission monitoring system) cannot be implemented by a source due to physical plant limitations or extreme economic reasons. In such cases, when the District exempts any source subject to this section by use of this provision from installing continuous emission monitoring systems, the District shall set forth alternative emission monitoring and reporting requirements (e.g., periodic manual stack tests) to satisfy the intent of these regulations. Examples of such special cases include, but are not limited to the following:

(a) Alternate monitoring requirements may be prescribed when installation of a continuous monitoring system or monitoring device specified by this section would not provide accurate determinations of emissions.

(b) Alternate monitoring requirements may be prescribed when the affected facility is infrequently operated.

(c) Alternative monitoring requirements may be prescribed when the District deems that the requirements of this section impose an extreme economic burden on the source owner or operator. The burden of proof for an alleged "economic burden" is to be borne by the source.

(d) Alternative monitoring requirements may be prescribed when the District deems that monitoring systems prescribed by this section cannot be installed due to physical limitations at the facility.

REGULATION 6.03. CONTROL OF NUISANCES

SECTION 1. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 2. PROHIBITION OF NUISANCES

When dust, fumes, gases, mist, odorous matter, vapors, or any combination thereof escape from a building or equipment in such a manner and amount as to cause a nuisance or to violate any regulation, the Board may order that the building or equipment in which processing, handling, or storage are done be tightly closed and ventilated in such a way that all air and gases and air or gas-bourne material leaving the building or equipment are treated by removal or destruction of air contaminants before discharge to the open air.

REGULATION 6.05. CONTROL OF FUGITIVE PARTICULATE EMISSIONS

SECTION 1. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Fugitive particulate matter" means any particulate matter which is emitted into the open air from points other than a stack outlet.

(b) "Open air" means the air outside buildings, structures, and equipment.

(d) No person shall cause or permit the discharge of visible fugitive emissions beyond the lot line of the property on which the emissions originate.

SECTION 3. EXISTING PRIVATELY OWNED OR MAINTAINED UNPAVED ROAD(S) AND UNPAVED PARKING AREA(S).

(a) Any person owning any unpaved road or unpaved parking area shall discontinue and prevent use of the road or parking area, unless the District has approved a fugitive dust control plan which includes preventive measures and the conditions of the approved plan are met continuously.

(b) Exceptions:

- (i) Any road or parking area which after demonstration to the District, will not exceed an average daily traffic count of 10 vehicles averaged over any consecutive 3-day period.
- (ii) Any road or parking area associated solely with housing project as of 4 family dwelling units or less.

REGULATION 6.06 CONTROL OF OPEN BURNING

SECTION 1. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 2. PROHIBITION OF OPEN BURNING

No person shall cause, allow, or maintain any open fire except as follows:

(a) Fires for the cooking of food for human consumption on other than commercial premises or fires determined by the District to be for recreational purposes;

(b) Fires for the purpose of weed abatement, disease, and pest prevention and control providing such fires are declared to be necessary for these purposes by the District and by the Health Department or County Agricultural Agent having jurisdiction;

(c) Fires set for prevention of a fire or safety hazard, providing said hazard is so declared by the fire department or by the appropriate regulatory agency having jurisdiction where said hazard exists;

(d) Fires set for the purpose of bona fide instruction and training of public and industrial employees in the methods of fighting fires, providing notice is given in each instance to the District five days in advance by the official in charge;

(e) Flare stacks for the combustion of waste gases provided that such stacks be equipped with smokeless tips.

REGULATION 6.07. STANDARD OF PERFORMANCE FOR EXISTING INDIRECT HEAT EXCHANGERS

SECTION 1. APPLICABILITY

The provisions of this section are applicable to each indirect heat exchanger of 1 million or more BTU per hour heat input which was in being or under construction before August 17, 1971. The combined total heat input capacity of all affected facilities subject to this regulation shall be used to determine the total allowable emissions from a source regardless of boiler or stack configuration.

SECTION 2. DEFINITIONS

(a) "Indirect Heat Exchanger" means any piece of equipment, apparatus, or contrivance used for the combustion of fuel in which the energy produced is transferred to its point of usage through a medium that does not come in contact with or add to the products of combustion.

(b) Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) No owner or operator subject to the provisions of this section shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of the quantity specified in Table A.

(b) No owner or operator subject to the provisions of this section shall cause the emission into the open air of particulate matter from any indirect heat exchanger which is greater than 20 percent opacity.

(c) The provisions of subsection (b) shall not apply to:

(i) Emissions into the open air of particulate matter from any indirect heat exchanger during building a new fire, cleaning the fire box, or blowing soot for a period or periods aggregating not more than 10 minutes in any 60 minutes which are less than 40 percent opacity;

(ii) Emissions from waterwall spreader-stoker indirect heat exchangers during startup operations if the emissions do not exceed the following limits:

a. first 30 minutes - 80 percent opacity

b. next hour - 60 percent opacity

c. next 2 1/2 hours - 40 percent opacity;

(iii) Emissions up to 40 percent opacity from all other waterwall indirect heat exchangers for any 30-minute period during startup operations.

TABLE A

MM BTU/HOUR HEAT INPUT	MAXIMUM PARTICULATE EMISSION RATES POUNDS PER MILLION BTU INPUT
10 or less	0.56
50	0.38
100	0.33
250	0.26
500	0.22
1000	0.19
2500	0.15
5000	0.13
7500	0.12
10000 or more	0.11

Interpolation of allowable emissions for intermediate heat input values not specified in the tables above may be accomplished by use of the equation shown below for the appropriate fuel and heat input range specified. In all equations X = millions of BTU per hour heat input and Y = allowable particulate emissions in pounds per million BTU heat input.

$$Y = 0.963\ X^{-0.2356}$$

SECTION 4. STANDARD FOR SULFUR DIOXIDE

(a) No owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain sulfur dioxide in excess of the weights listed in Table B below:

TABLE B
ALLOWABLE SULFUR DIOXIDE EMISSIONS BASED ON HEAT INPUT CAPACITY

MM BTU/Hour Heat Input	Pounds SO_2 per million BTU Heat Input Liquid or Gaseous Fuel	Solid Fuel
10 or Less	1.0	4.0
50	1.0	2.2
100	1.0	1.7
150	1.0	1.4
200	0.9	1.3
250 or more	0.8	1.2

Interpolation of allowable emissions for intermediate heat input values not specified in the table above mav be accomplished by use of the equations shown below for appropriate fuel and heat input specified:

$$\text{Liquid or Gaseous Fuel: } Y = 7.722\ X^{-0.4106}$$
$$\text{Solid Fuel: } Y = 9.46\ X^{-0.3740}$$

Where Y = allowable sulfur dioxide emissions in pounds per million BTU per hour heat input, and

X = millions of BTU per hour heat input capacity rating

(b) When different fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the following formula:

Allowable sulfur dioxide emission in pounds per million BTU per hour heat input =

$$\frac{y(a) + z(b)}{y + z}$$

Where:

y is the percent of total heat input derived from liquid fuel;

z is the percent of total heat input derived from solid fuel;

a is the allowable sulfur dioxide emission in pounds per million BTU heat input derived from liquid fuel; and

b is the allowable sulfur dioxide emission in pounds per million BTU heat input derived from solid fuel.

(c) Compliance shall be based on the total heat input from all fuels burned, including gaseous fuels.

REGULATION 6.08. STANDARD OF PERFORMANCE FOR EXISTING INCINERATORS

SECTION 1. APPLICABILITY

The provisions of this section shall apply to each incinerator in being or under construction before August 17, 1971, which is the affected facility.

SECTION 2. DEFINITIONS

(a) "Auxiliary Fuel" means a substance burned in an incinerator to supply additional heat to attain temperature sufficiently high to dry and ignite waste material and to maintain ignition of the waste material but which is never in contact with the waste material.

(b) "Day" means 24 hours.

(c) Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) No owner or operator of an incinerator shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.45 g/dscm (0.2 gr/dscf) corrected to 12 percent CO_2 excluding the contribution of carbon dioxide from auxiliary fuel.

(b) No owner or operator of an incinerator shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter of greater than 20 percent opacity.

SECTION 4. RECORD KEEPING

The owner or operator of any incinerator of more than 45 metric tons per day charging rate (50 tons per day) subject to the provisions of this regulation shall record the daily charging rates and hours of operation.

(d) (i) The process weight rate entry to be used in Table C for duplicate operations is the total, or combined process weight rate of all the individual component operations.

(ii) To determine an allowable emission rate for each stack when duplicate operations vent through separate stacks, the following formula shall be used:

$$E_s = E_t \left(\frac{P_s}{P_t}\right)$$

Where E_s = Allowable Emission rate for the individual stack

E_t = Total allowable emission rate for the duplicate operation (from Table A)

P_s = Process weight rate for process operations vented through individual stack

P_t = Total process weight rate for the duplicate operation

(iii) Where a single process operation is vented through multiple stacks, the allowable emission rate for all stacks venting the source shall be equal to the allowable emission rate as if the source vented through a single stack.

SECTION 4. STANDARD FOR NITROGEN OXIDES

No owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility or from any air pollution control equipment installed on any affected facility, any NO_x fumes in excess of:

(a) 300 ppm by volume, expressed as NO_2; or

(b) an invisible discharge.

REGULATION 6.09. STANDARD OF PERFORMANCE FOR EXISTING PROCESS OPERATIONS

SECTION 1. APPLICABILITY

The provisions of this section shall apply to each process operation which is the affected facility not otherwise regulated by other sections of this regulation and which was in being or had a construction permit issued by the District on or before the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Process Operation" means any method, form, action, operation, or treatment of manufacturing or processing, and shall include any storage or handling of materials or products, before, during, or after manufacturing or processing.

(b) "Process Weight" means the total weight of all materials introduced into any affected facility which may cause any emission of particulate matter, but does not include liquid and gaseous fuels charged, air, or uncombined water.

(c) "Process Weight Rate" means a rate established as follows:

(i) For continuous or long-run steady state operations, the total process weight for the entire period of continuous operation or for a typical portion thereof divided by the number of hours of such period or portion thereof;

(ii) For cyclical or batch unit operations, or unit processes, the total process weight for a period that covers a complete operation or an integral number of cylces divided by the hours of actual process operation during such a period.

Where the nature of any process operation or the design of any equipment is such as to permit more than one interpretation of this definition, the interpretation which results in the minimum value for allowable emission shall apply.

(d) "Affected Facility" as related to process operations means the last operation preceding the emission of air contaminants which results:

(i) In the separation of the air contaminant from the process materials; or

(ii) In the conversion of the process materials into air contaminants, but does not include an air abatement operation.

(e) "Duplicate Operation" - means any combination of two or more individual process operations of any size that have the same nomenclature and are located in the same source.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) No owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility, or from any air pollution control equipment installed on any affected facility, any gases which may contain particulate matter which:

(i) Is equal to or greater than 20 percent opacity; or,

(ii) Is in excess of the quantity specified in Table C of this regulation.

(b) An affected facility may elect to substitute the following standards in lieu of the value given in Table C:

(i) A maximum exit particulate emission conentration of 0.02 grains per standard cubic foot; and

(ii) Air pollution control equipment of at least 97 percent actual efficiency.

(iii) Addition of dilution air shall not constitute compliance.

TABLE C
ALLOWABLE RATE OF PARTICULATE EMISSION BASED ON PROCESS WEIGHT FOR EXISTING AFFECTED FACILITIES

Process Weight Rate		Maximum Allowable Emission Rate
lb/hr.	tons/hr.	lb/hr.
100 or less	0.05 or less	0.55
200	0.10	0.88
400	0.20	1.40
600	0.30	1.83
800	0.40	2.22
1000	0.50	2.58
1500	0.75	3.38
2000	1.00	4.10
2500	1.25	4.76
3000	1.50	5.38
3500	1.75	5.96
4000	2.00	6.52
5000	2.50	7.58
6000	3.00	8.56
7000	3.50	9.49
8000	4.00	10.4
9000	4.50	11.2
10000	5.00	12.0
12000	6.00	13.6
16000	8.00	16.5
18000	9.00	17.9
20000	10.00	19.2
30000	15.00	25.2
40000	20.00	30.5
50000	25.00	35.4
60000	30.00	40.0
70000	35.00	41.3
80000	40.00	42.5
90000	45.00	43.6
100000	50.00	44.6
120000	60.00	46.3
140000	70.00	47.8
160000	80.00	49.1
200000	100.00	51.3
1000000	500.00	69.0
2000000	1000.00	77.6
6000000	3000.00	92.7

Interpolation of the data for process weight rates up to 30.0 tons/hr. shall be accomplished by use of the equation $E = 4.10\ P^{0.67}$ and interpolation and extrapolation of the data for process weight rates in excess of 30.0 tons/hr. shall be accomplished by use of the equation

$$E = 55.0\ P^{0.11} - 40$$

Where E = rate of emission in lb/hr.
P = process weight in tons/hr.

REGULATION 6.10. STANDARD OF PERFORMANCE FOR EXISTING PROCESS GAS STREAMS

SECTION 1. APPLICABILITY

The provisions of this section shall apply to petroleum refineries, by-product coke plants, and any other processes which were in being or under construction before April 19, 1972.

SECTION 2. DEFINITIONS

(a) "Process Gas" means any gas generated by or employed in a process operation or process unit not specifically defined elsewhere within these regulations.

(b) Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 3. STANDARD FOR HYDROGEN SULFIDE

No owner or operator subject to the provisions of this regulation shall cause the emission or combustion of H_2S in a process gas stream to exceed 10 grains per 100 dry standard cubic feet of gas at zero per cent oxygen.

SECTION 4. STANDARD FOR SULFUR DIOXIDE

No owner or operator subject to the provisions of this regulation shall cause the emission of sulfur dioxide in a process gas stream to exceed 2000 parts per million by volume at zero per cent oxygen.

SECTION 5. STANDARD FOR CARBON MONOXIDE

No owner or operator subject to the provisions of this regulation shall cause the emission of carbon monoxide in a process gas stream unless the gases are burned at 1,300° F for 0.5 seconds or greater in a direct flame afterburner or equivalent device equipped with an indicating pyrometer which is positioned in the working area at the operator's eye level.

SECTION 6. COMPLIANCE SCHEDULE FOR CARBON MONOXIDE

The owner or operator of an affected facility not in compliance as of the adopted date shall be required to complete the following:

(a) Submit a control plan for achieving compliance no later than September 1, 1979.

(b) Award control system contract no later than October 1, 1979.

(c) Initiate on-site construction by March 1, 1980.

(d) Complete construction of control system by October 1, 1980.

(e) Achieve final compliance by December 1, 1980.

REGULATION 6.12. STANDARD OF PERFORMANCE FOR EXISTING ASPHALT PAVING OPERATIONS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to all asphalt paving operations except as provided in section 4 of this regulation, that was in being or had a construction permit issued by the District before the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Asphalt Paving Operations" means the use of asphalt in any paving operation, public or private, including, but not limited to: paving of roads, paving of parking lots, maintenance operations, application of tack coats, sealants, etc.

(b) "Asphalt" means a dark-brown to black cementitious material (solid, semisolid, or liquid in consistency) in which the predominating constituents are bitumens which occur in nature as such or which are obtained as residue in refining petroleum.

(c) "Cutback asphalt" means asphalt cement which has been liquified by blending with volatile organic compounds (diluents). Upon exposure to atmospheric conditions the volatile organic compounds evaporate, leaving the asphalt cement to perform its function.

(d) "Emulsified asphalt" means an emulsion of asphalt cement, volatile organic compounds, and water which contains a small amount of an emulsifying agent.

(e) "Maintenance operation" means patching of holes and breaks in pavement as is necessary for safety.

(f) "Penetrating prime coat" means an application of low-viscosity liquid asphalt to an absorbent surface. It is used to prepare an untreated base for an asphalt surface. The prime coat penetrates the base and plugs the voids, hardens the top, and helps bind it to the overlying asphalt course. It also reduces the necessity of maintaining an untreated base course prior to placing the asphalt pavement.

(g) "Unacceptable emulsion asphalt" means any emulsion asphalt which yields more than 7 percent by volume of oil distillate when tested according to AASHTO T 59-78, Section 7 through 9.

(h) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than 0.1 mm of Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

On or after April 1, 1980, no person shall use, or sell for use, manufacture, mix or store cutback asphalts or unacceptable emulsion asphalts for asphalt paving operations, except as exempted in section 4 of this regulation.

SECTION 4. EXEMPTIONS

The provision of this regulation shall not apply to the following asphalt paving operations:

(a) Application of penetrating prime coat;

(b) Maintenance operations during the months of November, December, January, February, and March.

REGULATION 6.13. STANDARD OF PERFORMANCE FOR EXISTING STORAGE VESSELS FOR VOLATILE ORGANIC COMPOUNDS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility which means each storage vessel for volatile organic compounds which was in being or had a construction permit issued by the District before April 9, 1972. and which has a storage capacity greater than 250 gallons.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Storage vessel" means any tank, reservoir, or container used for the storage of volatile organic compounds, but does not include:

(i) Pressure vessels which are designed to operate in excess of fifteen pounds per square inch gauge without emissions to the atmosphere except under emergency conditions.

(ii) Subsurface caverns or porous rock reservoirs, or

(iii) Underground tanks if the total volume of volatile organic compounds added to and taken from a tank annually does not exceed twice the volume of the tank.

(iv) Portable tanks of less than 500 gallons capacity which are used for the temporary storage of a product or intermediate product in a manufacturing process.

(b) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than 0.1 mm Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(c) "True vapor pressure" means the equilibrium partial pressure exerted by a volatile organic compound as determined in accordance with methods specified by the District.

(d) "Floating roof" means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the volatile organic compound being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

(e) "Vapor recovery system" means a vapor gathering system capable of collecting all volatile organic compounds discharged from the storage vessel and a vapor disposal system capable of processing such volatile organic compounds so as to prevent their emission to the atmosphere.

(f) "Reid vapor pressure" is the absolute vapor pressure of certain volatile organic compounds as determined by methods specified by the District.

(g) "Submerged fill pipe" means any fill pipe the discharge of which is entirely submerged when the liquid level is 6 inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean every fill pipe the discharge opening of which is entirely submerged when the liquid level is 2 times the fill pipe diameter above the bottom of the tank.

(h) "Seal" means a sliding seal, either a metallic-shoe-type seal or a nonmetallic resilient-type seal which prevents volatile organic compounds from escaping around the perimeter of the floating roof.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

The owner or operator of any storage vessel to which this regulation applies shall store volatile organic compounds as follows:

(a) If the storage vessel has a storage capacity greater than 40,000 gallons and if the true vapor pressure of the volatile organic compounds as stored, is equal to or greater than 78 mm Hg(1.5 psia) but not greater than 570 mm Hg (11.1 psia) the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.

(b) If the storage vessel has a storage capacity greater than 40,000 gallons and if the true vapor pressure of the volatile organic compounds as stored is greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

(c) If the storage vessel has a storage capacity greater than 250 gallons, and if the true vapor pressure of the volatile organic compound, as stored, is equal to or greater than 1.5 psia, as a minimum it shall be equipped with a permanent submerged fill pipe.

True vapor pressure "as stored" shall be determined on an instantaneous basis under conditions representing expected worst case conditions.

SECTION 4. OPERATING REQUIREMENTS

(a) There shall be no visible holes, tears, or other openings in the seal or any seal fabric; and

(b) All openings, except stub drains, shall be equipped with covers, lids, or seals such that:

(i) The cover, lid, or seal is in the closed position at all times except when in actual use; and

(ii) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports; and

(iii) Rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

SECTION 5. COMPLIANCE TIME TABLE

(a) The owner or operator of an affected facility shall demonstrate compliance as of the date of adoption of this regulation.

(b) An owner or operator of a storage vessel with a storage capacity of greater than 250 gallons but less than or equal to 40,000 gallons which is associated with a bulk gasoline plant or terminal regulated by Regulation 6.20 and 6.21 or a volatile organic materials loading facility regulated by Regulation 6.22 shall adhere to the compliance schedule provided therein.

REGULATION 6.14. STANDARD OF PERFORMANCE FOR SELECTED EXISTING PETROLEUM REFINING PROCESSES AND EQUIPMENT

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility which was in being or had a construction permit issued by the District before the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined therein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means vacuum producing systems and process unit turnarounds associated with a petroleum refinery.

(b) "Vacuum producing systems" means equipment which produces a partial vacuum in a vessel.

(c) "Process unit turnaround" means the shutting down, depressurization, and purging of a process unit or vessel.

SECTION 3. STANDARD OF HYDROCARBONS

The owner or operator of an affected facility shall install, operate, and maintain all equipment necessary to accomplish the following:

(a) Vacuum producing systems. All gaseous hydrocarbons emitted from condensors, hot wells, vacuum pumps, and accumulators be collected and vented to a firebox, flare, or other control device of equivalent efficiency as determined by the District.

(b) Process unit turnaround. The gaseous hydrocarbons purged from a process unit or vessel shall be vented to a firebox, flare, or other control device of equivalent efficiency as determined by the District until the pressure in the process unit is less than five psig.

SECTION 4. MONITORING AND REPORTING REQUIREMENTS

(a) The owner or operator shall:

(i) Keep a record of each process unit turnaround.

(ii) Record the approximate hydrocarbon concentration when the hydrocarbons were first discharged to the atmosphere.

(iii) Record the approximate total quantity of hydrocarbons emitted to the atmosphere.

(b) The owner or operator shall retain these records for at least two years and submit them to the District upon request.

SECTION 5. COMPLIANCE TIME TABLE

The owner or operator of an affected facility shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(b) Award the control device contract no later than December 1, 1979.

(c) Initiate on-site construction or installation of emissions control equipment no later than July 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than February 1, 1981.

(e) Final compliance shall be achieved no later than May 1, 1981.

REGULATION 6.15. STANDARD OF PERFORMANCE FOR GASOLINE TRANSFER TO EXISTING SERVICE STATION STORAGE TANKS (STAGE I VAPOR RECOVERY)

SECTION 1. APPLICABILITY

The provisions of this section shall apply to the transfer of volatile organic compounds from transport vehicle tanks into storage tanks at service stations which were in being or had a construction permit issued by the District before the effective date of this regulation.

SECTION 2. DEFINITIONS

(a) "Affected facility" means the gasoline storage tanks at a service station.

(b) "Service station" means any public or private establishment which dispenses gasoline into vehicle fuel tanks.

(c) "Vapor balance system" means a system which transfers vapors from storage tanks during filling operations to the storage compartment of the transport vehicle delivering fuel.

(d) "Vent line restriction" means:

(i) An orifice of one-half to three-quarter inch inside diameter in the vent line, or

(ii) A pressure-vacuum relief valve which opens at eight ounces per square inch pressure and at 4 ounces per square inch vacuum or

(iii) A vent shut-off valve which is activated by connection of the vapor return hose.

(e) "Interlock system" means devices which either prevent fuel delivery or keep the storage tank sealed unless the vapor return hose is connected.

(f) Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 3. STANDARD FOR GASOLINE TRANSFER

(a) The owner or operator of an affected facility shall install, maintain and operate the following devices on the storage tanks:

(i) Submerged fill pipe

(ii) Gauge-well drop tube, which extends within six inches of the bottom of the tank

(iii) Vent line restriction(s) on the affected facility.

(iv) Vapor balance system with an interlock system and vapor tight connections on the liquid fill and vapor return hoses. The cross-sectional area of the vapor return hose must be at least 50 percent of the liquid fill hose, and free of flow restrictions to achieve acceptable recovery. The type, size and design of the vapor balance system are subject to the approval of the District.

(b) The owner or operator may elect to use an alternate control system provided it can be demonstrated to the District's satisfaction to achieve an equivalent control efficiency.

(c) The owner or operator shall not allow delivery of fuel to the storage tanks until the vapor balance system is properly connected to the transport vehicle and the affected facility.

SECTION 4. STANDARD FOR TRANSPORT VEHICLE

No owner or operator of transport vehicle shall make delivery of gasoline unless the transport vehicle's tank has been checked for leaks at the loading terminal per Regulation 6.21. A suitable record of the leak tests or checks shall be maintained and kept in the vehicle's cab for inspection by District personnel at any time.

SECTION 5. COMPLIANCE TIMETABLE

(a) The owner or operator of a service station with an annual thruput greater than or equal to 250,000 gallons shall be required to complete the following:

(i) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(ii) Award the control device contract no later than November 1, 1979.

(iii) Initiate on-site construction or installation of emission control equipment no later than April 1, 1980.

(iv) On-site construction or installation of emission control equipment shall be completed no later than November 1, 1980.

(v) Final compliance shall be established by equipment inspection by District personnel on or before Feburary 1, 1981.

(b) The owner or operator of a service station with an annual thruput of less than 250,000 but more than 100,000 gallons shall be required to complete the following:

(i) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(ii) Award the control device contract no later than November 1, 1980.

(iii) Initiate on-site construction or installation of emission control equipment no later than April 1, 1981.

(iv) On-site construction or installation of emission control equipment shall be completed no later than November 1, 1981.

(v) Final compliance shall be established by equipment inspection by District personnel on or before February 1, 1982.

REGULATION 6.16. STANDARD OF PERFORMANCE FOR EXISTING LARGE APPLIANCE SURFACE COATING OPERATIONS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility which was in being or had a construction permit issued by the District before the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means a coating line for large appliances including but not limited to: doors, cases, lids, panels, and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dish washers, trash compactors, and air conditioners.

(b) "Applicator" means the mechanism or device used to apply the coating, including but not limited to dipping or spraying.

(c) "Flash off area" means the space between the applicator and the oven.

(d) "Prime coat" means the first film of coating applied in a multi-coat operation.

(e) "Topcoat" means the final film of coating applied in a two-coat operation or the coatings which are applied after the prime coat in a multi-coat operation.

(f) "Single coat" means a single film coating applied directly to the metal substance omitting the prime coat.

(g) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat or single coatings containing volatile organic compounds. This shall include, but is not limited to:

(i) mixing operations;

(ii) process storage;

(iii) applicators;

(iv) drying operations including flash off area operation, oven drying, baking, curing, and polymerization;

(v) clean up operations;

(vi) leaks, spills and disposal of volatile organic compounds;

(vii) processing and handling of recovered volatile organic compounds.

(viii) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line.

(ix) If any portion of the series of equipment and/or operations qualify for an exemption according to section 6 of this regulation, then that portion shall be considered to be a separate coating line.

(h) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than 0.1 mm of Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(i) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds or recovered volatile organic compounds, but does not mean storage tanks which are subject to Regulation 6.13.

(j) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile Organic Compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design or equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

No person shall cause, allow or permit an affected facility to discharge into the atmosphere more than 15 percent by weight of the volatile organic compounds input into the affected facility.

SECTION 4. COMPLIANCE

(a) In all cases the design of any control device is subject to approval by the District.

(b) Compliance with the standard in section 3 shall be demonstrated by a material balance except in those cases which the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined by the District, based upon an engineering analysis of: the control system design, control device efficiency, control system capture efficiency, a andany other factors that could influence the performance of the system.

If requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control system or any part of the system.

(c) With the prior approval of the Distict, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under section 6 of this regulation.

(d) Whenever deemed necessary by the District, the District shall obtain samples of the coating used at an affected facility to verify that the coating meets the requirements in section 6 of this regulation. The following methods of analysis for coatings shall be used as applicable except in those cases where the District determines that other methods are more appropriate:

(i) ASTM D 1644-75 Method A,

(ii) ASTM D 1465-60(74)

(iii) ASTM D 2369-73, or

(iv) Federal Standard 141 a, Method 4082.1.

SECTION 5. COMPLIANCE TIMETABLE

The owner or operator of an affected facility shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than October 1, 1979.

(b) Award the control device contract no later than January 1, 1980.

(c) Initiate on-site construction or installation of emissions control equipment no later than March 1, 1980.

(d) On-site construction or instillation of emission control equipment shall be completed no later than October 1, 1981.

(e) Final compliance shall be shown no later than January 1, 1982.

SECTION 6. EXEMPTIONS

(a) Any affected facility shall be exempt from the provisions of section 3 of this regulation if the volatile organic compound content of the coating is less than 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the applicators associated with the prime, single or topcoat coating line.

(b) Repair coating operations for the purpose of repairing scratches and nicks that occur during assembly shall be exempt from the provision of section 3 of this regulation.

(c) Any affected facility using this section of this regulation may elect to use an arithmetic average of the coatings used in the particular coating line involved. If such average meets the exemption, then all the coatings will be considered to meet the exemption.

(d) The exemptions specified in this section may be achieved by:

  (i) Use of a low solvent coating, and/or

  (ii) Any other emission reduction process or equipment shown to the District's satisfaction to be as effective.

REGULATION 6.18. STANDARD OF PERFORMANCE FOR EXISTING SOLVENT METAL CLEANING EQUIPMENT

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility which was in being or had a construction permit issued by the District on or before the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means cold cleaners, open top vapor degreasers, and conveyorized degreasers which utilize volatile organic compounds to remove soluble impurities from metal surfaces.

(b) "Volatile organic compounds" means chemical compounds of carbon excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate which have a vapor pressure greater than (one) 0.1 mm of Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(c) "Freeboard height" means, for a cold cleaner, the distance from the liquid solvent level in the degreaser tank to the lip of the tank. For a vapor degreaser it is the distance from the solvent vapor level in the tank to the lip of the tank.

(d) "Freeboard ratio" means the freeboard height divided by the width of the degreaser.

(e) "Refrigerated chiller" means a second set of freeboard condenser coils which create a cold air blanket about the vapor zone and are located slightly above the primary condenser coils.

(f) "Cold cleaner" means a batch-loaded degreaser whose solvent is kept below its boiling point.

(g) "Open top vapor degresser" means a batch loaded degreaser whose solvent is heated to its boiling point creating a solvent vapor zone.

(h) "Conveyorized degreasers" means a degreaser which is continuously loaded by means of a conveyor system. Its solvent may be boiling or nonboiling.

(i) "Solvent" means, in the regulation, volatile organic compounds.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

The owner or operator of an affected facility to which this regulation applies shall install, maintain and operate the control equipment and observe at all times the operating requirements which apply to his type of degreaser as specified in sections 4, 5, and 6 of this regulation.

SECTION 4. COLD CLEANERS

(a) Control Equipment

(i) The cleaner shall be equipped with a cover. If the volatile organic compound volatility is greater than 15 mm of Hg measured at 100°F or if the volatile organic compound is agitated or heated, then the cover shall be desiged so that it can be easily operated with one hand.

(ii) The cleaner shall be equipped with a drainage facility such that volatile organic compound that drains off parts removed from the cleaner will return to the cleaner. If the volatile organic compound volatility is greater than 32 mm of Hg measured at 100°F then the drainage facility shall be internal so that parts are enclosed under the cover while draining. The drainage facility may be external if the District determines that an internal type cannot fit into the cleaning system.

(iii) A permanent, conspicuous label, summarizing the operating requirements specified in paragraph (b) of section 4 shall be installed on or near the cleaner.

(iv) If used, the volatile organic compound spray shall be fluid stream (not a fine, atomized or shower type spray) and at a pressure which does not cause excessive splashing.

(v) If the volatile organic compound volatility is greater than 32 mm of Hg measured at 100°F or if the volatile organic compound is heated above 120°F, then one of the following control devices shall be used:

a Freeboard that gives a freeboard ratio greater than or equal to 0.7.

b Water cover (volatile organic compound must be insoluble in and heavier than water).

c Other systems of equivalent control, such as a refrigerated chiller or carbon adsorption.

(b) Operating Requirements

(i) Do not dispose of waste volatile organic compound or transfer it to another party, such that greater than 20 percent by weight of the waste volatile organic compound can evaporate into the atmosphere. Store waste volatile organic compound only in covered containers.

(ii) Close degreaser cover whenever not handling part in the cleaner.

(iii) Drain cleaned parts until dripping ceases (fifteen seconds is usually necessary).

SECTION 5. OPEN TOP VAPOR DEGREASERS

(a) Control Equipment

(i) The degreaser shall be equipped with a cover that can be opened and closed easily without disturbing the vapor zone.

(ii) The degreaser shall be equipped with the following safety switches.

a. Condenser flow switch and thermostat to shut off sump heat if condenser coolant either is not circulating or is too warm.

b. Spray safety switch to shut off spray pump if the vapor level drops more than 4 inches below the bottom condenser coil in order to prevent spraying above the vapor level.

c. Vapor level control thermostat which shuts off sump heat if the vapor zones rises above the design level.

d. Equivalent safety systems as approved on a case-by-case basis by the District.

(iii) The degreaser shall be equipped with at lease one of the following major control devices:

a. Freeboard ratio greater than or equal to 0.75, and if the degreaser opening is greater than ten square feet, the cover shall be powered or mechanically assisted.

b. Refrigerated chiller.

c. Enclosed design such that the cover or door opens only when the dry part is actually entering or existing the degreaser.

d. Carbon adsorption system, with ventilation greater than or equal to 50 cfm/square foot of air/vapor interface area (when cover is open), and exhausting less than 25 ppm by volume volatile organic compound averaged over one complete adsorption cycle.

e. Control system demonstrated to the District's satisfaction to have control efficiency equivalent to or better than any of the above.

(iv) A permanent, conspicuous label, summarizing the operating procedures specified in paragraph (b) of this section shall be installed on or near the degreaser.

(b) Operating Requirements

(i) Keep the cover closed at all times except when processing work loads through the degreaser.

(ii) Minimize volatile organic compound carry-out by the following measures:

a. Rack parts so that entrainment of volatile organic compound is avoided and full drainage is accomplished.

b. Move parts in and out of the degreaser at vertical speed less than 11 ft./min.

c. Degrease the work load in the vapor zone until condensation ceases [30 seconds or more is usually necessary].

d. Tip out any pools of volatile organic compound on the cleaned parts before removal.

e. Allow part to dry within the degreaser above the vapor zone until visually dry [15 seconds is usually necessary].

(c) Do not degrease porous or absorbent materials such as cloth, leather, wood, or rope.

(d) Work load should not occupy more than half of the degreaser's open top area.

(e) The vapor level should not drop more than 4 inches when the work load enters or leaves the vapor zone.

(f) Never spray above the vapor level.

(g) Repair volatile organic compound leaks immediately or shut down the degreaser.

(h) Do not dispose of waste volatile organic compound or transfer it to another party such that greater than 20 percent by weight of the waste volatile organic compound can evaporate into the atmosphere. Store waste volatile organic compound only in closed containers.

(i) Exhaust ventilation should not exceed 65 cfm per square foot of degreaser area unless necessary to meet OSHA requirements or control device requirements. Ventilation fans should not be used near the degreaser opening.

(j) Water should not be visually detectable in the volatile organic compound exiting the water separator.

SECTION 6. CONVEYORIZED DEGREASERS

(a) Control Equipment

(i) A conveyorized degreaser shall be enclosed (such that in-plant air movement does not impinge upon the internal atmosphere of the degreaser) except for work load entrances and exits.

(ii) The degreaser shall be equipped with a drying tunnel or another means such as rotating baskets sufficient to prevent cleaned parts from carrying out volatile organic compound liquid or vapor.

(iii) Minimized openings: entrances and exits shall silhouette work loads so that the average clearance between the largest parts and the edge of the degreaser opening is either less than 4 inches or less than 10 percent of the width of the opening.

(iv) Down-time covers: the degreaser shall be equipped with covers for closing off the entrance and exit during shutdown hours.

(v) If the degreaser has an air/volatile organic compound interface area or an air/vapor interface area equal to or greater than 20 square ft., it shall be equipped with at least one of the following major devices:

a. Refrigerated chiller.

b. Carbon adsorption system with ventilation greater than or equal to 50 cfm/square foot of air/vapor interface area (when down-time covers are open) and exhausting less than 25 ppm of volatile organic compound by volume averaged over a complete absorption cycle.

c. A system demonstrated to the District's satisfaction to have a control efficiency equivalent to or better than either of the above.

(vi) If the degreaser is a vapor type, it shall be equipped with following safety switches:

a. Condensor flow switch and thermostat which will shut off the sump heat if coolant is either not circulating or is too warm.

b. Spray safety switch which will shut off the spray pump or conveyor if the vapor level drops more than 4 inches below the bottom condenser coil in order to prevent spraying above the vapor level.

c. Vapor level control thermostat which will shut off sump heat if the vapor level rises above the design level.

d. Equivalent safety systems as approved on a case-by-case basis by the District.

(vii) A permanent, conspicuous label, summarizing the operating operating requirements specified in paragraph (b) of this section shall be installed on or near the cleaner.

(b) Operating Requirements

(i) Exhaust ventilation should not exceed 65 cfm per square foot of degreaser opening unless necessary to meet OSHA requirements or control device requirements. Work place fans should not be used near the degreaser opening.

(ii) Minimize volatile organic compound carry-out by the following measures:

a. Rack parts so that entrainment of volatile organic compound is avoided and full drainage is accomplished

b. Maintain vertical conveyor speed at less than 11 ft./min.

(iii) Do not dispose of waste volatile organic compound or transfer it to another party such that greater than 20 percent by weight of the waste volatile organic compound only in closed containers.

(iv) Repair volatile organic compound leaks immediately or shut down the degreaser.

(v) Water should not be visually detectable in the volatile organic compound existing the water separator.

(vi) Down-time covers shall be placed over entrances and exits of the degreaser immediately after the conveyor and exhaust are shut down and removed just before they are started up.

SECTION 7. COMPLIANCE TIMETABLE

The owner or operator of an affected facility subject to this regulation shall demonstrate compliance according to the following schedule:

(a) Submit a final control plan for achieving compliance with the regulation no later than September 1, 1979.

(b) Award the control system contract no later than November 1, 1979.

(c) Initiate on-site construction or installation of emissions control equipment no later than July 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than May 1, 1981.

(e) Final compliance shall be achieved no later than July 1, 1981

REGULATION 6.19. STANDARD OF PERFORMANCE FOR EXISTING METAL FURNITURE SURFACE COATING OPERATIONS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility which was in being or had a construction permit issued by the District on or before the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means a coating line for indoor and/or outdoor metal furniture.

(b) "Applicator" means the mechanism or device used to apply the coating, including but not limited to, dipping, spraying, or flow-coating.

(c) "Flash off area" means the space between the applicator and the oven.

(d) "Prime coat" means the first film of coating applied in a multi-coat operation.

(e) "Topcoat" means the final film of coating applied in a two-coat operation or the coatings which are applied after the single coat in a multi-coat operation.

(f) "Single coat" means a single film coating applied directly to the metal substrate omitting the prime coat.

(g) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat or single coatings containing volatile organic compounds. This shall include, but is not limited to:

(i) Mixing operations;

(ii) process storage;

(iii) applicators;

(iv) drying operations including flasn off area evaporation, oven drying, baking, curing, and polymerization;

(v) clean up operations;

(vi) leaks, spills and disposal of volatile organic compounds;

(vii) processing and handling of recovered volatile organic compounds;

(viii) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line.

(ix) If any portion of the series of equipment and/or operations qualify for an exemption according to section 6 of this regulation, then that portion shall be considered to be a separate coating line.

(h) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than 0.1 mm of Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(i) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds or recovered volatile organic compounds, but does not mean storage tanks which are subject to Regulation 6.13.

(j) "Metal furniture" means household and business items including but not limited to: tables, chairs, wastebaskets, beds, desks, lockers, benches, shelving, file cabinets, lamps and room dividers.

(k) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than 15 percent by weight of the volatile organic compounds input into the affected facility.

SECTION 4. COMPLIANCE

(a) In all cases the design of any control device is subject to approval by the District.

(b) Compliance with the standard in Section 3 of this regulation shall be demonstrated by a material balance except in those cases which the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control system or any part of the system.

(c) With the prior approval of the District, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under section 6 of this regulation.

(d) Whenever deemed necessary by the District, the District shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in section 6 of this regulation. The following methods of analysis for coatings shall be used as applicable except in those cases where the District determines that other methods are more appropriate.

(i) ASTM D 1644-75 Method A,

(ii) ASTM D 1475-60(74),

(iii) ASTM D 2369-73, or

(iv) Federal Standard 141 a, Method 4082.1.

SECTION 5. COMPLIANCE TIMETABLE

The owner or operator of an affected facility shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(b) Award the control system contract or the exempt coatings and any accompanying process changes no later than January 1, 1980.

(c) Initiate on-site construction or installation of emissions control equipment or process changes for exempt coatings no later than May 1, 1980.

(d) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than May 1, 1981.

(e) Final compliance shall be achieved no later than August 1, 1981.

SECTION 6. EXEMPTIONS

Any affected facility shall be exempt from the provisions of section 3 of this regulation if the volatile organic compound content of the coating is less than 0.36 kilograms per liter of coating (3.0 pounds per gallon), excluding water, delivered to the applicators associated with the prime, single or topcoat coating line.

REGULATION 6.20. STANDARD OF PERFORMANCE FOR EXISTING BULK GASOLINE PLANTS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility which was in being or had a construction permit issued by the District on or before the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means a bulk gasoline plant.

(b) "Bulk Gasoline Plant" means a facility for the storage and dispensing of gasoline that employs tank trucks, trailers, or other mobile non-marine vessels for both incoming and outgoing gasoline transfer operations.

(c) "Gasoline" means any petroleum distillate having a Reid vapor pressure of 4.0 pounds per square inch or greater used as a fuel for internal combustion engines.

(d) "Bottom fill system" means a system of filling transport vehicle tanks through an opening that is flush with the bottom of the transport vehicle tank.

(e) "Vapor Balance System" means a combination of pipes or hoses which create a closed system between the vapor spaces of an unloading tank and a receiving tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded.

(f) "Submerged fill tube system" means a fill tube the discharge of which is entirely submerged when the liquid level is six (6) inches above the bottom of the transport vehicle tank.

(g) "Transport Vehicle" means tank trucks, trailers, or railroad tank cars.

SECTION 3. STANDARD FOR HYDROCARBONS

(a) The owner or operator of an affected facility shall install, maintain, and operate:

  (i) Stationary storage tank control devices according to the provisions of Regulation 6.13.

  (ii) A vapor balance system for:

    a. filling of stationary storage tanks from transport vehicle tanks and

    b. filling of transport vehicle tanks from stationary storage tanks.

  (iii) For loading into transport vehicle tanks either:

    a. A submerged fill tube system, or

    b. A bottom fill system.

(b) The vapor balance system shall be equipped with fittings which are vapor tight and will automatically close upon disconnection so as to prevent the release of organic material.

(c) The cross-sectional area of the vapor return hose must be at least 50 percent of the cross-sectional area of the liquid fill line and free of flow restrictions.

(d) The vapor balance system must be equipped with interlocking devices which prevent tansfer of gasoline until the vapor return hose is connected.

(e) Transport vehicle tank hatches shall be closed at all times during loading operations.

(f) There shall be no leaks from the pressure/vacuum relief valves and hatch covers of the stationary storage tanks or transport vehicle tanks during loading.

(g) The pressure relief valves on storage vessels and tank trucks or trailers shall be set to release at no less than 0.7 psig unless a lower setting is required by applicable fire codes.

(h) The owner or operator shall not load gasoline into any transport vehicle or receive gasoline from any transport vehicle which does not have proper fittings for connection of the vapor balance system, nor shall the owner or operator load or receive gasoline unless the vapor balance system is properly connected and in good working order. Except as provided in subsection (i) of this section, the fittings on the transport vehicle tanks must be vapor tight and automatically close upon disconnection so as to prevent the release of organic material.

(i) When using the vapor balance system, the following shall apply to the loading of a transport vehicle tank by means of a submerged fill tube system:

   (i) When inserted into the tank, the submerged fill tube system must form a vapor tight seal with the tank.

   (ii) Tank hatches are to be opened only for the minimum time necessary to insert or remove the submerged fill tube system.

(j) No owner or operator shall permit gasoline to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.

SECTION 4.

The owner or operator may elect to use an alternate control system if it can be demonstrated to the District's satisfaction that the alternate system will achieve equivalent control efficiency.

SECTION 5. COMPLIANCE TIMETABLE

(a) The owner or operator of an affected facility shall be required to complete the following:

   (i) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

   (ii) Award the control system contract no later than January 1, 1980.

   (iii) Initiate on-site construction or installation of emission control equipment no later than July 1, 1980.

   (iv) On-site construction or installation of emission control equipment shall be completed no later than March 1, 1981.

   (v) Final compliance shall be achieved no later than May 1, 1981.

REGULATION 6.21 STANDARD OF PERFORMANCE FOR EXISTING GASOLINE LOADING FACILITIES AT BULK TERMINALS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility which was in being or had a construction permit issued by the District before the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means the facilities at a bulk gasoline terminal for loading gasoline into tank trucks, trailers, railroad tank cars or other mobile, non-marine vessels.

(b) "Bulk gasoline terminal" means a facility for the storage and dispensing of gasoline where incoming gasoline loads are received by pipeline, marine tanks or barge (solely or in combination with tank trucks, trailers, railroad tank cars, or other mobile, non-marine vessels) and where outgoing gasoline loads are transferred by tank trucks, trailers, railroad tank cars, or other mobile non-marine vessels.

(c) "Gasoline" means any petroleum distillate used as a fuel for internal combustion engines and having a Reid vapor pressure of 4.0 pounds per square inch or greater.

SECTION 3. STANDARD FOR HYDROCARBONS

(a) No owner or operator of any loading facility shall load gasoline unless such facility is equipped with a vapor control system which is in good working order and in operation.

(b) Loading shall be accomplished in such a manner that all displaced vapor and air will be vented only to the vapor collection system. Measures shall be taken to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected.

(c) No owner or operator shall permit the hydrocarbon emissions from the vapor control device to exceed 80 milligrams per liter of gasoline loaded.

(d) No owner or operator shall open tank hatches or allow hatches to be opened at any time during loading operations if bottom-fill is practiced. If top-submerged fill is practiced, the hatch is to be opened the minimum time necessary to install and remove the submerged fill pipe and associated vapor collection equipment.

(e) No owner or operator shall permit any leak in the railroad cars, trailers, tank trucks, pressure relief valves, or associated vapor collection. A leak is defined as a reading of 10 percent of the lower explosive limit as propane on the portable hydrocarbon detector (explosimeter) with the probe 1 centimeter from the source.

(f) No owner or operator shall permit gasoline to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.

SECTION 4. MONITORING AND REPORTING REQUIREMENTS

The owner or operator shall conduct such monitoring of operations and submit records as specified by the District.

SECTION 5. COMPLIANCE

(a) The design of the vapor control system is subject to the approval of the District,

(b) Method(s) specified by the District shall be used to determine compliance with the standard in section 3 of this regulation.

SECTION 6. COMPLIANCE TIMETABLE

The owner or operator of an affected facility shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979,

(b) Award the control system contract no later than January 1, 1980,

(c) Initiate on-site construction or installation of emission control equipment no later than July 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than March 1, 1981.

(e) Final compliance shall be achieved no later than May 1, 1981.

REGULATION 6.23. STANDARD OF PERFORMANCE FOR EXISTING DRY CLEANING FACILITIES

SECTION 1. APPLICABILITY

The provisions of this section shall apply to each dry cleaning system which was in being or had a construction permit issued by the District before the effective date of these regulations.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Fluorocarbon" means any of the family of saturated or partially saturated carbon compounds containing fluorine.

(b) "Petroleum Solvent" means any carbon compound used for cleaning clothes, except fluorocarbons or perchloroethylene.

(c) "Dry Cleaning System" means all equipment from the cleaning wheel up to and including final drying. All associated equipment or operations such as sniffers, muck cookers, transfer operations are included for purposes of determining compliance with this section.

SECTION 3. STANDARD FOR SOLVENT VAPORS

(a) For perchloroethylene plants the following minimum requirements shall be met and maintained:

(i) There will be no liquid leakage of perchloroethylene from the system;

(ii) Reserved for future inclusion (gaseous leakage);

(iii) The entire dryer exhaust shall be vented through a carbon absorber or equally effective control device;

(iv) The maximum organic solvent concentration in the vent from the dryer control device shall not exceed 100 ppm by volume before dilution;

(v) Combined filter and distillation wastes shall not contain more than 25 kilograms of solvent per 100 kilograms of wet waste material.

(vi) The residue from a solvent still shall not contain more than 60 Kg of solvent per 100 Kg of wet waste material.

(vii) Filtration cartridges must be drained in the filter housing for at least 24 hours before being discarded. The drained cartridges should be dried in the dryer tumbler if at all possible.

(viii) Any other filtration or distillation system can be used if equivalency to this regulation is demonstrated. For purposes of equivalency demonstration any system reducing waste losses below 1 Kg solvent per 100 Kg clothes cleaned shall be considered equivalent.

SECTION 4. EXEMPTIONS

Section 3 (a) (iii) and (iv) are not applicable to plants where an adsorber cannot be accommodated because of inadequate space or to plants where no or insufficient steam capacity is available to desorb adsorbers.

SECTION 5. LABELING OF EQUIPMENT

All drycleaning equipment subject to this section shall have an easily readable label in a conspicuous place which details proper operating instructions.

SECTION 6. COMPLIANCE TIMETABLE

The owner or operator of an affected facility subject to this regulation shall demonstrate compliance according to the following schedule:

(a) For perchloroethylene plant(s):

(i) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(ii) Award the control system contract no later than January 31, 1980.

(iii) Initiate on-site construction no later than May 1, 1980.

(iv) On-site construction or installation of emission control equipment shall be completed no later than December 31, 1981.

(v) Final compliance shall be achieved no later than March 1, 1982.

REGULATION 6.24. STANDARD OF PERFORMANCE FOR EXISTING SOURCES USING ORGANIC MATERIALS

SECTION 1. APPLICABILITY

(a) The provisions of this section shall apply to any affected facility using any organic materials which was in being or had a construction permit issued by the District prior to the effective date of this regulation except when a specific regulation exists for the source.

(i) Those portions of any series of affected facilities designed for processing a continuous web, strip, or wire which emit organic materials shall be taken collectively to determine compliance with this section.

(ii) Emissions of organic materials resulting from air or heated drying of products for the first 12 hours after their removal from an affected facility shall be included in determining compliance with this section.

(iii) Emissions of organic materials to the atmosphere from the cleanup with organic materials of any affected facility shall be included with other emissions of organic materials from that affected facility for determining compliance with this section.

(b) The provisions of this section shall not apply to:

(i) The use of equipment for which other requirements are specified by Regulation 6 for existing sources or which are exempt from air pollution control requirements by said sections;

(ii) The spraying or other employment of insecticides, pesticides, or herbicides;

(iii) The employment, application, evaporation, or drying of saturated halogenated hydrocarbons or perchlorethylene;

(iv) The use of any material in any affected facility described in 1 (a) above if the volatile content of the material prior to application consists only of Class III solvent and a solid content comprising not less than 70 percent by volume of the material as applied.

(v) The use of any material in any affected facility described in 1 (a) above if the volatile content of the material prior to application consists only of water and Class III solvent and the organic solvent comprises not more than 20 percent of said volatile content by volume as applied.

SECTION 2. DEFINITIONS

(a) "Affected Facility" means any article, machine, equipment, or other contrivance used for employing or applying any organic material.

(b) "Organic Materials" means organic compounds which are used as dissolvers, reaction media, viscosity reducers, cleaning agents, dilutents, or thinners, except that such materials which have a vapor pressure greater than 0.5 mm Hg at 220 degrees Fahrenheit shall not be considered to be included unless exposed to temperatures exceeding 220 degrees Fahrenheit.

(c) "Class I Solvent" means any organic material which comes into contact with flame or is baked, heat-cured, or heat-polymerized in the presence of oxygen, unless it can be demonstrated to the District's satisfaction that no new compounds are created through such contact.

(d) "Class II Solvent" means any organic material except perchlorethylene, which has an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified below or which exceeds any of the following individual percentage composition limitations referred to the total volume of organic materials:

(i) A combination of hydrocarbons having an olefinic or cycloolefinic type of unsaturation, 5 percent;

(ii) A combination of aromatic compounds with 8 or more carbon atoms to the molecule except ethylbenzene, 8 percent;

(iii) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene, or toluene, 20 percent;

When any organic material or a constituent of an organic material may be classified by its chemical structure into more than one of the above groups of organic compounds, it shall be considered as a member of the most reactive chemical group, that is that group having the least allowable percent of the total volume of organic materials.

(e) "Class III Solvent" means any organic material which is not classified as a Class I or a Class II solvent.

(f) Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 3. STANDARD FOR ORGANIC MATERIALS

(a) No owner or operator subject to the provisions of this regulation shall discharge into the atmosphere more than 15 pounds of organic materials in any one day, or more than 3 pounds in any one hour, from any existing affected facility in which any Class I solvent is used unless said discharge has been reduced by at least 85 percent by weight.

(b) No owner or operator subject to the provisions of this regulation shall discharge into the atmosphere more than 40 pounds of organic materials in any one day, nor more than 8 pounds in any one hour, from any existing affected facility in which any Class II solvent is used unless said discharge has been reduced by at least 85 percent by weight.

(c) No owner or operator subject to the provisions of this regulation shall discharge into the atmosphere more than 3000 pounds of organic materials in any one day, nor more than 450 pounds in any one hour, from any existing affected facility in which any Class III solvent or any material containing such solvent is employed or applied unless said discharge has been reduced by at least 85 percent by weight.

(d) If incineration is the control method used to achieve compliance with section 3 (a), (b), or (c), then 90 percent of the carbon in the organic material must be oxidized to carbon dioxide.

SECTION 4. MONITORING AND REPORTING

(a) Any person controlling the emission of organic materials pursuant to this section shall provide, properly install, and maintain in calibration, in good working order and in operation devices as specified in the permit to construct or the permit to operate, or as specified by the District, for indicating temperatures, pressures, rates of flow or other operating conditions necessary to determine the degree and effectiveness of air pollution control.

(b) Any person using organic materials or any material containing organic materials shall supply the District, upon request and in the manner and form prescribed, written evidence of the chemical compositin, physical properties, and amount consumed for each organic material used.

SECTION 5. COMPLIANCE

(a) In all cases the design of any control system is subject to approval by the District.

(b) Compliance with the standard in section 3 shall be demonstrated by material blanace except in those cases where the District determines a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis of: the control system design, control device efficiency, control system capture efficiency and any other factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control device.

SECTION 6. EXEMPTION(S)

Facilities which manufacture surface coatings for other facilities, which use or apply surface coatings and which are in compliance with an applicable emission standard exemption in Regulation 6 or 7, are exempted from the standards in section 3 of this regulation for the manufacture of those particular coatings.

SECTION 7. COMPLIANCE TIMETABLE

Any affected facility shall be in compliance as of the effective date of this section.

REGULATION 6.25. STANDARD OF PERFORMANCE FOR EXISTING SANITARY LANDFILLS

SECTION 1. APPLICABILITY

The provisions of this section apply to all sanitary landfills located in Jefferson County which commenced operation on or before the effective date of this regulation.

SECTION 2. REGISTRATION

The owner or operator of each affected sanitary landfill shall register with the District on forms provided by the District.

SECTION 3. REPORTS

The District may require the owner or operator of a sanitary landfill to submit reports containing information relating to the nature of fill, size of operation, and the extent of any expected or actual gaseous or particulate emissions from its operation.

SECTION 4. CONTROL REQUIREMENTS

The District may require the owner or operator of any sanitary landfill to install and operate by-product gas venting and particulate control measures to the extent that public health is protected when emissions occur during and after the life of a landfill. These measures may include but are not limited to:

(a) Injections

(b) Venting equipment

(c) Incineration of Hazardous Emissions

(d) Flow and emission control devices

(e) Inert fill applications

(f) Dust control measures

SECTION 5. TESTING REQUIREMENTS

The District may require the owner or operator to conduct emissions testing of vent gases for purposes of determining the nature of the relative concentrations of the components of such gases.

REGULATION 6.26 STANDARD OF PERFORMANCE FOR EXISTING VOLATILE ORGANIC COMPOUND WATER SEPARATORS

SECTION 1. APPLICABILITY

The provisions of this section shall apply to any compartment of any vessel or device operated for the recovery of volatile organic compounds which contains 200 gallons a day or more of any volatile organic compounds from any equipment which processes, refines, stores, or handles hydrocarbons with a Reid vapor pressure of 0.5 psia or greater which was in being or under construction prior to the effective date of this regulation.

SECTION 2. DEFINITIONS

(a) "Volatile organic compound water separator" means any tank, box, sump, or other container in which any volatile organic compound or product thereof, floating on or entrained or contained in water entering such tank, box, sump, or other container, is physically separated and removed from such water prior to outfall, drainage, or recovery of such water.

(b) Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 3. STANDARD FOR HYDROCARBONS

The emissions of all hydrocarbon vapors and gases shall be reduced by at least 90 percent by weight.

All gauging and sampling devices shall be gas tight except when gauging and/or sampling is taking place.

SECTION 4. COMPLIANCE TIMETABLE

Any affected facility shall be in compliance on or before the effective date of this regulation.

REGULATION 6.27 STANDARD OF PERFORMANCE FOR EXISTING LIQUID WASTE INCINERATORS

SECTION 1. APPLICABILITY

This section is applicable to those facilities disposing of waste solvents, chemicals, and other flammable material by incineration which are in existence or having a construction permit issued by the District before the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Liquid waste" means any material in a liquid form which has no commercial value other than recovery of its recyclable components, or has been transferred to a facility for disposal.

(b) "Liquid waste incinerator" is a device for incineration of liquid waste.

(c) "Exit gas temperature" means the temperature of the products of combustion measured at the end of the incinerator and prior to any air pollution control device.

(d) "Residence time" means the time required for the products of combustion to travel from the liquid waste burner to the exit of the incinerator while maintaining the average gas temperature associated with the residence time.

(e) "Auxiliary fuel" means natural gas, propane, butane, distillate fuel oil or other fuel free of toxic compounds and containing not more than 0.5% incombustible particulate.

(f) "Combustible liquid waste" means any liquid waste with a heat content greater than 10,000 BTU/lb or capable of sustaining combustion in an incinerator without auxiliary fuel.

(g) "Partially combustible liquid waste" means any liquid waste with a heat content greater than 5000 BTU/lb and less than 10,000 BTU/lb requiring auxiliary fuel for sustained combustion.

(h) "Average gas temperature" is the mean temperature of the products of combustion while in the incinerator and prior to any spray chamber of air pollution control device.

SECTION 3. STANDARD FOR PARTICULATE MATTER

No owner or operator subject to the provisions of this regulation shall cause the emission of particulate matter from a liquid waste incinerator to exceed:

(a) 0.2 gr/scf corrected to 12% CO_2 excluding the contribution of carbon dioxide from auxiliary fuel, and

(b) 20% opacity.

SECTION 4. EQUIPMENT STANDARDS

(a) Incineration of partially combustible liquids shall be accomplished in an incinerator equipped with means for firing sufficient auxiliary fuel to sustain combustion at temperatures as required by this regulation. No auxiliary fuel shall be required for incineration of combustible liquids unless otherwise required by the District.

(b) Incineration of liquid wastes with a viscosity of 750 SSU or greater shall be accomplished in a burner equipped with steam or air atomization.

(c) Incineration of halogenated liquid wastes shall be accomplished in an incinerator equipped with wet scrubber.

(d) Incineration of liquid wastes containing inorganic salts shall be accomplished in an incinerator equipped with a particulate control device of sufficient efficiency to meet the emission standard specified in section 3 (a) and (b) of this regulation.

(e) The incinerator shall be capable of maintaining an average gas temperature of 1600° F with a residence time as determined by the District to provide complete combustion of the liquid waste.

(f) The incinerator shall be equipped with a fail-safe device designed to interrupt the delivery of liquid waste to the burner in the event of:

(i) Fire or flame reaching the line delivering waste to the burner and

(ii) Loss of burner flame.

(g) The delivery pipe to the liquid waste burner shall be equipped with a flow indicator capable of measuring the maximum demand of the burner.

(h) The incinerator shall be equipped with an indicating pyrometer or thermometer to measure the exit gas temperature.

SECTION 5. RECORDKEEPING

The owner or operator of any liquid waste incinerator subject to the provisions of this regulation shall record the following information:

(a) Daily operating hours of liquid waste incinerator,

(b) Daily log of liquid waste received and specifying:

(i) The amount received;

(ii) A general description of the waste;

(iii) The source from whom the waste was received;

(iv) A designation of whether the waste contains material toxic to humans.

SECTION 6. TIMETABLE FOR COMPLIANCE

(a) Compliance with the provisions of section 4 of this regulation shall occur on or before February 1, 1980.

(b) Compliance with all other provisions of this regulation shall occur as of the effective date of this regulation.

REGULATION 7

STANDARDS OF PERFORMANCE FOR NEW AFFECTED FACILITIES

REGULATION 7.01 GENERAL PROVISIONS

SECTION 1. APPLICABILITY

Unless specifically exempted in Regulation 2.02, the provisions of this section shall apply to any affected facility the construction, modification, or reconstruction of which is commenced on or after the effective date of an applicable standard of performance in this regulation.

SECTION 2. PERMITS REQUIRED

Unless specifically exempted in this regulation, all affected facilities under this regulation must obtain a permit issued by the District pursuant to provisions of Regulation 2.

SECTION 3. REPORTING AND RECORDKEEPING

Notwithstanding the provisions of this regulation for specific sources, or Regulation 2

(a) Any owner or operator subject to the provisions of this regulation shall furnish the District written notification as follows:

   (i) A notification of the anticipated date of initial startup of a new affected facility not more than 60 days or less than 30 days prior to such date;

   (ii) A notification of the actual date of initial startup of a new affected facility within 15 days after such date.

(b) Any owner or operator subject to the provisions of this regulation shall maintain for a period of 2 years a record of the occurrence and duration of any startup, shutdown, or malfunction in operation of any affected facility.

(c) A written report of excess emissions as defined in applicable subsections shall be submitted to the District by each owner or operator for each calendar quarter. The report shall include the magnitude of excess emissions as measured by the required monitoring equipment reduced to the units of the applicable standard, the date, and time of commencement and completion of each period of excess emissions. Periods of excess emissions due to startup, shutdown, and malfunction shall be specifically identified. The nature and cause of any malfunction (if known), and corrective action taken, or preventive measures adopted shall be reported. Each quarterly report is due by the 30th day following the end of the calendar quarter. Reports are not required for any quarter unless there have been periods of excess emissions.

(d) Any owner or operator subject to the provisions of this regulation shall maintain a file of all measurements, including monitoring and performance testing measurements, and all other reports and records required by all applicable subsections. Any such measurements, reports, and records shall be retained for at least 2 years following the date of such measurements, reports, and records.

(e) An owner or operator of an affected facility subject to the provisions of this regulation shall furnish the District, as requested, with all reports on emissions, equipment status, process information, in-stack emission monitoring, stack testing, fuels data, and other relevant areas relating to permitted affected facilities in accordance with Regulation 2 and the provisions of this regulation.

SECTION 4. PERFORMANCE TESTS

(a) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility and at such other times as may be required by the District, the owner or operator of any affected facility except those affected facilities specified below shall conduct performance test(s) according to Regulation 1.04 and furnish the District a written report of the results of such performance test(s).

(i) Process operation with a process weight rate of less than 100 tons per hour;

(ii) Indirect heat exchanger of 250 million BTU heat input per hour or less;

(iii) Incinerator with a charging rate of 45 metric tons per day (50 tons/day) or less;

(iv) Affected facilities specified in Regulations 7.09, 7.12, 7.21, 7.22, 7.30, 7.31, 7.32, 7.33.

(b) The District may require the owner or operator of any affected facility including those specified in paragraphs (a) (i) through (a) (iv) of this section to conduct performance test(s) according to Regulation 1.04 and furnish a written report of the results of such performance test(s).

SECTION 5. NOTIFICATION AND RECORDKEEPING

Nothing in this section shall relieve the owner or operator from the responsibility of obtaining the appropriate permits required.

(a) Any owner or operator subject to the provisions of this regulation shall furnish the District written notification as follows:

(i) The date of construction, reconstruction, or modification of an affected facility is commenced, postmarked no later than 30 days after such date;

(ii) The anticipated date of initial startup of an affected facility postmarked not more than 60 days nor less than 30 days prior to such date;

(iii) The actual date of initial startup of an affected facility postmarked within 15 days after such date;

(iv) Any modification of an affected facility. This notice shall be postmarked 60 days, or as soon as practicable before the change is commenced, and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The District may request additional relevant information subsequent to this notice;

(v) The date upon which demonstration of the continuous monitoring system performance test commences in accordance with (c) of section 6 of this regulation. Notification shall be postmarked not less than 30 days prior to such date.

(b) Any owner or operator subject to the provisions of this regulation shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

(c) Each owner or operator required to install a continuous monitoring system shall submit for every calendar quarter a written report of excess emissions (as defined in applicable sections) to the District. Both a printed report and computer tape or cards shall be furnished in the format specified by the District. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter and shall include the following information:

(i) The magnitude of excess emissions computed in accordance with section 6 of this regulation, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions;

(ii) All hourly averages shall be reported for sulfur dioxide and nitrogen oxides monitors. The hourly averages shall be made available on computer tape or cards.

(iii) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted;

(iv) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments;

(v) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(d) Any owner or operator subject to the provisions of this regulation shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurement; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this regulation recorded in a permanent form suitable for inspection. The file shall be retained for at least 2 years following the date of such measurements, maintenance, reports and records.

SECTION 6. MONITORING REQUIREMENTS

(a) Unless otherwise approved by the District or specified in applicable sections, the requirements of this section shall apply to all continuous monitoring systems required under this regulation.

(b) All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests under section 4 of this regulation. Verification of operational status shall, as a minimum, consist of the following:

(i) For continuous monitoring systems referenced in paragraph (c) (i) of this section, completion of the conditioning period specified by applicable requirements in Appendix B to 40 CFR 60;

(ii) For continuous monitoring systems referenced in paragraph (c) (ii) of this section, completion of seven days of operation;

(iii) For monitoring devices referenced in applicable regulations, completion of the manufacturer's written requirements or recommendations for checking the operation of the device.

(c) During any performance tests required under section 4 of this regulation or within 30 days thereafter and at such other times as may be required by the District, the owner or operator of any affected facility shall conduct continuous monitoring system performance evaluations and furnish the District within 60 days thereof copy of a written report of the results of such tests. These continuous monitoring system performance evaluations shall be conducted in accordance with the following specifications and procedures:

(i) Continuous monitoring systems listed within this subparagraph except as provided in subparagraph (ii) of this paragraph shall be evaluated in accordance with the requirements and procedures contained in the applicable performance specification of Appendix B to 40 CFR 60 as follows:

a. Continuous monitoring systems for measuring opacity of emissions shall comply with Performance Specification 1;

b. Continuous monitoring systems for measuring nitrogen oxides emissions shall comply with Performance Specification 2;

c. Continuous monitoring systems for measuring sulfur dioxide emissions shall comply with Performance Specification 2;

d. Continuous monitoring systems for measuring the oxygen content or carbon dioxide content of effluent gases shall comply with Performance Specification 3.

(ii) An owner or operator who, prior to September 11, 1974 entered into a binding contractual obligation to purchase specific continuous monitoring system components or who, prior to October 6, 1975, installed continuous monitoring equipment, shall comply with the following requirements:

a. Continuous monitoring systems for measuring opacity of emission levels within ± 20 percent with a confidence level of 95 percent. The Calibration Error Test and associated calculation procedures set forth in Performance Specification 1 of Appendix B to 40 CFR 60 shall be used for demonstrating compliance with this specification;

b. Continuous monitoring systems for measurement of nitrogen oxides or sulfur dioxide shall be capable of measuring emission levels within ± 20 percent with a confidence level of 95 percent. The Calibration Error Test, the Field Test for Accuracy (Relative), and associated operating and calculation procedures set forth in Appendix B to 40 CFR 60 shall be used for demonstrating compliance with this specification;

c. Owners or operators of all continuous monitoring systems installed on an affected facility prior to October 6, 1975, may be required to conduct tests under a. and/or b. of this subparagraph if so requested by the District.

(iii) All continuous monitoring systems referenced by paragraph (c) (ii) of this section shall be upgraded or replaced (if necessary) with new continuous monitoring systems, and the new or improved systems shall be demonstrated to comply with applicable performance specifications under paragraph (c) (i) of this section on or before September 11, 1979.

(d) Owners or operators of all continuous monitoring systems installed in accordance with the provisions of this section shall check the zero and span drift at least once daily in accordance with the method prescribed by the manufacturer of such systems unless the manufacturer recommends adjustments at shorter intervals, in which case such recommendations shall be followed. The zero and span shall, as a minimum, be adjusted whenever the 24-hour zero drift or 24-hour calibration drift limits of the applicable performance specifications in Appendix B to 40 CFR 60 are exceeded. For continuous monitoring systems measuring opacity of emissions, the optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero or span drift adjustments except that, for systems using automatic zero adjustments, the optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity. Unless otherwise approved by the District, the following procedures, as applicable shall be followed.

(i) For extractive continuous monitoring systems measuring gases, minimum procedures shall include introducing applicable zero and span gas mixtures into the measurement system as near the probe as it is practical. Span and zero gases certified by their manufacturer to be traceable to National Bureau of Standards reference gases shall be used whenever these reference gases are available. The span and zero gas mixtures shall be the same composition as specified in Appendix B to 40 CFR 60. Every six months from date of manufacture, span and zero gases shall be analyzed by conducting triplicate analyses with Reference Methods 6 for sulfur dioxide, 7 for nitrogen oxides, and 3 for oxygen, and carbon dioxide, respectively.

(ii) For non-extractive continuous monitoring systems measuring gases, minimum procedures shall include upscale check(s) using a certified calibration gas cell or test cell which is functionally equivalent to a known gas concentration. The zero check may be performed by computing the zero value from upscale measurements or by mechanically producing a zero condition;

(iii) For continuous monitoring systems measuring opacity of emissions, minimum procedures shall include a method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photodetector assembly.

(e) Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under (d) of this section, all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

(i) All continuous monitoring systems referenced by paragraphs (c) (i) and (c) (ii) of this section for measuring opacity of emissions shall complete a minimum of one cycle of sampling and analyzing for each successive ten-second period and one cycle of data recording for each successive 6-minute period;

(ii) All continuous monitoring systems referenced by (c) (i) of this section for measuring oxides of nitrogen, sulfur dioxide, carbon dioxide, or oxygen shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period;

(iii) All continuous monitoring systems referenced by paragraph (c) (ii) of this section, except opacity, shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive one-hour period.

(f) All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. Additional procedures for location of continuous monitoring systems contained in the applicable Performance Specifications of Appendix B to 40 CFR 60 shall be used.

(g) When the effluents from a single affected facility or two or more affected facilities subject to the same emission standard are combined before being released to the atmosphere, the owner or operator may install applicable continuous monitoring systems on each effluent or on the combined effluent. When the affected facilities are not subject to the same emissions standards, separate continuous monitoring systems shall be installed on each effluent. When the effluent from the affected facility is released to the atmosphere through more than one point, the owner or operator shall install applicable continuous monitoring systems on each separate effluent unless the installation of fewer systems is approved by the District.

(h) Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to six-minute averages and for systems other than opacity to one-hour averages. Six-minute opacity averages shall be calculated from 24 or more data points equally spaced over each six-minute period. For systems other than opacity, one-hour averages shall be computed from four or more data points equally spaced over each one-hour period. Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph. An arithmetic or integrated average of all data may be used. The data output of all continuous monitoring systems may be recorded in reduced or nonreduced form (e.g., ppm pollutant and percent oxygen or lb/million BTU of pollutant). All excess emissions shall be converted into units of the standard using the applicable conversion procedures specified in these regulations. After conversion into units of the standard, the data may be rounded to the same number of significant digits used in the regulation to specify the applicable standard (e.g., rounded to the nearest one percent opacity).

(i) Upon written application by an owner or operator, the District may allow alternative monitoring procedures or requirements which have been approved by the United States Environmental Protection Agency including, but not limited to the following:

(i) Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this regulation would not provide accurate measurements due to liquid water or other interferences caused by substances with the effluent gases;

(ii) Alternate monitoring requirements when the affected facility is infrequently operated;

(iii) Alternative monitoring requirements to accommodate continuous monitoring systems that require additional measurements to correct stack moisture conditions;

(iv) Alternative locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements;

(v) Alternative methods of converting pollutant concentration measurements to units of the standards;

(vi) Alternative procedures for performing daily checks of zero and span drift that do not involve use of span gases or test cells;

(vii) Alternatives to the A.S.T.M. test methods or sampling procedures specified by any regulation;

(viii) Alternative continuous monitoring systems that do not meet the design or performance requirements in Performance Specification 1, Appendix B to 40 CFR 60, but adequately demonstrate a definite and consistent relationship between its measurements and the measurements of opacity by a system complying with the requirements in Performance Specification 1. The District may require that such demonstration be performed for each affected facility.

(ix) Alternative monitoring requirements when the effluent from a single affected facility or the combined effluent from two or more affected facilities are released to the atmosphere through more than one point.

REGULATION 7.02. CONTROL OF NUISANCES

SECTION 1. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 2. PROHIBITION OF NUISANCES

When dust, fumes, gases, mist, odorous matter, vapors, or any combination thereof escape from a building or equipment in such a manner and amount as to cause a nuisance or to violate any regulation, the Board may order that the building or equipment in which processing, handling, or storage are done be tightly closed and ventilated in such a way that all air and gases and air or gas-borne material leaving the building or equipment are treated by removal or destruction of air contaminants before discharge to the open air.

REGULATION 7.04. CONTROL OF FUGITIVE PARTICULATE EMISSIONS

SECTION 1. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Fugitive particulate matter" means any particulate matter which is emitted into the open air from points other than a stack outlet.

(b) "Open air" means the air outside buildings, structure, and equipment.

SECTION 2. STANDARD FOR PARTICULATE MATTER

(b) When particulate matter escapes from a building or equipment in such a manner and amount as to cause a nuisance or to violate any regulation, the District may order that the building or equipment in which processing, handling and storage are done, be tightly closed and ventilated in such a way that all air and gases and air or gas-borne material leaving the building or equipment, are treated by removal or destruction of air contaminants before discharge to the open air.

(d) No person shall cause or permit the discharge of visible fugitive emissions beyond the lot line of the property on which the emissions originate.

REGULATION 7.05. CONTROL OF OPEN BURNING

SECTION 1. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 2. PROHIBITION OF OPEN BURNING

No person shall cause, allow, or maintain any open fire except as follows:

(a) Fires for the cooking of food for human consumption on dther commercial premises or fires determined by the District to be for recreational purposes;

(b) Fires set for the purpose of weed abatement, disease, and pest prevention and control providing such fires are declared to be necessary for these purposes by the District and by the Health Department or County Agricultural Agent having jurisdiction;

(c) Fires set for prevention of a fire or safety hazard, providing said hazard is so declared by the fire department or by the appropriate regulatory agency having jurisdiction where said hazard exists;

(d) Fires set for the purpose of bona fide instruction and training of public and industrial employees in the methods of fighting fires, providing notice is given in each instance to the District five days in advance by the official in charge;

REGULATION 7.06 STANDARDS OF PERFORMANCE FOR NEW INDIRECT HEAT EXCHANGERS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility commenced after the applicable classification date defined below.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means an indirect heat exchanger having a heat input capacity of more than one million BTU per hour.

(b) "Indirect heat exchanger" means any piece of equipment, apparatus or contrivance used for the combustion of fuel in which the energy produced is transferred to its point of usage through a medium that does not come in contact with or add to the products of combustion.

(c) "Classification date" means:

(i) August 17, 1971 for affected facilities with a capacity of more than 250 million BTU per hour heat input with respect to particulate emissions, sulfur dioxide emissions and (if fuels other than lignite are burned) nitrogen oxide emissions;

(ii) April 9, 1972 for affected facilities with a capacity of 250 million BTU per hour heat input or less with respect to particulate emissions and sulfur dioxide emissions;

(iii) December 22, 1976 for affected facilities with a capacity of more than 250 million BTU per input with respect to nitrogen oxides if lignite is the fuel burned.

(d) "Fossil fuel" means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

(e) "Coal" means all solid fuels classified as anthracite, bituminous, subbituminous or lignite by A.S.T.M. designation D388-66.

(f) "Coal refuse" means waste products of coal mining, cleaning, and coal preparation operations, which contain coal, matrix material, clay, and other materials.

(g) "Wood residue" means bark, sawdust, slabs, chips, shaving, mill trim, and other wood products derived from wood processing and forest management operations.

SECTION 3. METHOD FOR DETERMINING ALLOWABLE EMISSION RATES

(a) The total rated heat input capacity of all affected facilities within a source, including those for which an application to construct, modify or reconstruct has been submitted to the District, shall be used as specified in sections 4 and 5 of this regulation to determine the allowable emission in terms of pounds per million BTU input.

(b) At such times as any affected facility is assigned an allowable emission rate by the District; at no time thereafter shall that rate be changed due to inclusion or shutdown of any affected facility at the source.

SECTION 4. STANDARD FOR PARTICULATE MATTER

No owner or operator of an affected facility subject to the provisions of this regulation shall cause to be discharged into the atmosphere from that affected facility, particulate matter in excess of that specified below:

(a) Four sources having a total heat input capacity, as determined by section 3(a) of this regulation which are:

(i) 10 million BTU per hour or less, the standard is 0.56 pounds per million BTU actual heat input;

(ii) 250 million BTU per hour or more, the standard is 0.10 pounds per million BTU actual heat input;

(iii) If the affected facility subject to this regulation commenced before the effective date of this regulation, for heat input values between (i) and (ii) above, the standard in pounds per million BTU actual heat input, is equal to: 0.9634 times that quantity obtained by raising the total heat input capacity (in millions of BTU per hour) to the -0.2356 power;

(iv) If the affected facility subject to this regulation commenced on or after the effective date of this regulation, for heat input values between (i) and (ii) on previous page, the standard in pounds per million BTU actual heat input, is equal to: 1.919 times that quantity obtained by raising the total heat input capacity (in millions of BTU per hour) to the -0.535 power;

(b) Emissions which exhibit greater than 20 percent opacity except:

(i) That, for indirect heat exchangers with a heat input capacity of 250 million BTU/hr or more, a maximum of 40 percent opacity shall be permissible for not more than 2 consecutive minutes in any 60 consecutive minutes;

(ii) That, for indirect heat exchangers with heat input capacity of less than 250 million BTU/hr, a maximum of 40 percent opacity shall be permissible for not more than 6 consecutive minutes in any 60 consecutive minutes during cleaning the fire box or blowing soot.

(iii) For emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.

SECTION 5. STANDARD FOR SULFUR DIOXIDE

No owner or operator of an affected facility subject to the provisions of this regulation shall cause to be discharged into the atmosphere from that affected facility, any gases which contain sulfur dioxide in excess of that specified below:

(a) For sources which have a total heat input capacity, as determined by section 3 (a) of this regulation, which are:

(i) 10 million BTU per hour or less, the standard is one pound per million BTU actual heat input for combustion of liquid and gaseous fuels and 4.0 pounds per million BTU actual heat input for combustion of solid fuels;

(ii) 250 million BTU per hour, the standard is 0.8 pound per million BTU actual heat input for combustion of liquid and gaseous fuels and 1.2 pounds per million BTU actual heat input for combustion of solid fuels;

(iii) For Heat input values between (i) and (ii) above, the standard in pounds per million BTU actual heat input, is equal to:

a. for combustion of liquid and gaseous fuels, 7.7223 times that quantity obtained by raising the total heat input opacity (in millions of BTU per hour) to the -0.4106 power;

b. for combustion of solid fuels, 9.46 times that quantity obtained by raising the total heat input capacity (in millions of BTU per hour) to the 0.3740 power.

(b) When different fuels are burned simultaneously in any combustion, the applicable standard shall be determined by proration using the equation given in Appendix A of this regulation.

(c) Compliance shall be based on the total heat input from all fuels burned, including gaseous fuels.

SECTION 6. STANDARD FOR NITROGEN OXIDES

(a) No owner or operator of an affected facility with a heat input capacity of 250 million BTU per hour or more subject to the provisions of this regulation shall cause to be discharged into the atmosphere any gases which contain nitrogen oxides expressed as nitrogen dioxide in excess of:

(i) 0.20 lb. per million BTU heat input (0.36 g. per million cal) derived from gaseous fuel;

(ii) 0.30 lb. per million BTU heat input (0.54 g. per million cal) derived from liquid fuel;

(iii) 0.70 lb. per million BTU heat input (1.26 g. per million cal) derived from solid fuel (except lignite);

(iv) 0.60 lb. per million BTU heat input (1.08 g. per million cal) derived from lignite fuel.

(b) When different fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the equation given in Appendix B to this regulation.

SECTION 7. Emission and Fuel Monitoring

The provisions of this section shall apply to any affected facility of more than 250 million BTU per hour rated heat input capacity.

(a) Each owner or operator shall install, calibrate, maintain, and operate continuous monitoring systems for measuring the opacity of emissions, sulfur dioxide emissions, nitrogen oxides emissions and either oxygen or carbon dioxide except as provided in (b) of this section.

(b) Certain of the continuous monitoring system requirements under (a) of this section do not apply to owners or operators under the following conditions:

(i) For an indirect heat exchanger that burns only gaseous fuel, continuous monitoring systems for measuring the opacity of emissions are not required;

(ii) For an indirect heat exchanger that burns only natural gas, continuous monitoring systems for measuring sulfur dioxide emissions are not required;

(iii) Notwithstanding section 6 (b) of Regulation 7.01, installation of a continuous monitoring system for nitrogen oxides may be delayed until after the initial performance tests under section 4 of Regulation 7.01 have been conducted. If the owner or operator demonstrates during the performance test that emissions of nitrogen oxides are less than 70 percent of the applicable standards in section 6 of this regulation, a continuous monitoring system for measuring nitrogen oxides emissions is not required. If the initial performance test results show that nitrogen oxide emissions are greater than 70 percent of the applicable standard, the owner or operator shall install a continuous monitoring system for nitrogen oxide within one year after the date of the initial performance tests under section 4 of Regulation 7.01 and comply with all other applicable monitoring requirements under these regulations.

(iv) If an owner or operator does not install any continuous monitoring systems for sulfur oxides and nitrogen oxides, as provided under paragraphs (b) (i) and (b)(iii) or paragraphs (b) (ii) and (b)(iii) of this section, a continuous monitoring system for measuring either oxygen or carbon dioxide is not required.

(v) For an indirect heat exchanger that does not use a flue gas desulfurization device, a continuous monitoring system for measuring sulfur dioxide emissions is not required if the owner or operator monitors sulfur dioxide emissions by fuel sampling & analysis.

(c) For performance evaluations under section 6 (c) of Regulation 6.01 and calibration checks under section 6 (d) of Regulation 7.01, the following procedures shall be used:

(i) Reference Method 6 or 7, as applicable, shall be used for conducting performance evaluations of sulfur dioxide and nitrogen oxides continuous monitoring systems;

(ii) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of Appendix B to 40 CFR 60;

(iii) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be 80, 90, or 100 percent and for a continuous monitoring system measuring sulfur oxides or nitrogen oxides the span value shall be determined as shown in Appendix C of this regulation;

(iv) All span values computed under paragraph (c)(iii) of this section for burning combinations of fuels shall be rounded to the nearest 500 ppm;

(v) For an indirect heat exchanger that simultaneously burns fossil fuel and nonfossil fuel, the span value of all continuous monitoring systems shall be subject to the District's approval.

(d) A continuous monitoring system for measuring either oxygen or carbon dioxide in the flue gases shall be installed, calibrated, maintained and operated by the owner or operator.

(e) For any continuous monitoring system installed under paragraph (d) of this section, the following conversion procedure shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/million BTU);

(i) When a continuous monitoring system for measuring oxygen is selected, the measurement of the pollutant concentration and oxygen concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the District shall be when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used:

$$E = (20.9CF)/(20.9 - \%\ \text{oxygen})$$

Where:

E, C, F and % oxygen are determined under paragraph (f) of this section.

(ii) When a continuous monitoring system for measuring carbon dioxide is selected, the measurement of a pollutant concentration and carbon dioxide concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used:

$$E = (100\ CF_c)/(\%\ \text{carbon dioxide})$$

Where:

E, C, Fc and % carbon dioxide are determined under paragraph (f) of this section.

(f) The values used in the equations under paragraphs (e)(i) and (e) (ii) of this section are derived as follows:

(i) E = Pollutant emission, g/million cal (lb/million BTU).

(ii) C = Pollutant concentration, g/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by .0000415 M g/dscm per ppm (2.59 times 10 raised to the minus 9 power times M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole).

M = 64.07 for sulfur dioxide and 46.01 for nitrogen oxides.

(iii) F,Fc = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ration of the volume of carbon dioxide generated to the calorific value of the fuel combusted (Fc), respectively, as follows:

a. For anthracite coal as classified according to A.S.T.M. D388-66(72), F = 1.139 dscm/million cal (10140 dscf/million BTU) and Fc = 0.222 scm CO2/million cal 1980 scf CO2/million BTU).

b. For sub-bituminous and bituminous coal as classified according to ASTM D388-66(72), F = 1.103 dscm/million cal (9820 dscf/million BTU) and Fc = 0.203 scm CO2/million cal (1810 scf CO2/million BTU).

d. For gaseous fossil fuels, F = 0.982 dscm/million cal (8740 dscg/million BTU). For natural gas, propane and butane fuels, Fc = 0.117 scm CO2/million cal (1040 scf CO2/million BTU) for natural gas; 0.135 scm CO2/million cal (1200 scf CO2/million BTU) for propane; and 0.142 scm CO2/million cal (1250 scf CO2/million BTU) for butane.

e. For bark, F = 0.450 dscm/million cal (9575 dscf/million BTU) and Fc = 0.091 scm CO2/million BTU). For wood residue other than bark, F = 0.434 dscm/million cal (9233 dscf/million BTU) and Fc = 0.086 scm CO2/million cal 1842 scf CO2/million BTU).

(iv) The owner or operator may use the equation given in Appendix D of this regulation to determine an F factor (dscm/million cal, or dscf/million BTU) on a dry basis (if it is desired to calculate F on a wet basis consult with the District or Fc factor scf of the F or Fc factors specified in paragraph (f) (iii) of this section.

a. H, C, S, N, and O are content by weight of hydrogen carbon, sulfur, nitrogen, and Oxygen (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired using A.S.T.M. method D3178-73 or D3176-74 (solid fuels) or computed from results using A.S.T.M. methods D1137-53(75), DI945-64(73), D1946-67(72) (gaseous fuels) as applicable.

b. GCV is the gross calorific value (cal/g BTU/lb) of the fuel combusted determined by A.S.T.M. test methods D2015-66(72) for solid fuels and D1826-64(70) for gaseous fuels as applicable.

(v) For affected facilities firing combinations of fuels, the F or Fc factors determined by paragraphs (f) (iii) and (f) (iv) of this section shall be prorated in accordance with applicable formula as given in Appendix E of this regulation.

(g) For the purpose of reports required under section (5) (c) of Regulation 7.01, periods of excess emissions that shall be reported are defined as follows:

(i) Opacity. Excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 20 percent opacity, except that one six-minute average per hour of up to 27 percent opacity need not be reported.

(ii) Sulfur dioxide. Excess emissions for affected facilities are defined as any 3 hour period during which the average emissions (arithmetic average of 3 contiguous one hour periods) of sulfur dioxide as measured by a continuous monitoring system exceed the applicable standard under section 5 of this regulation.

(iii) Nitrogen oxides. Excess emissions for affected facilities using a continuous monitoring system for measuring nitrogen oxides are defined as any 3 hour period during which the average emissions (arithmetic average of 3 contiguous one hour periods) exceed the applicable standards under section 6 of this regulation.

(h) The District may require for any indirect heat exchanger unit of 250 million BTU per hour heat input or less, any or all of the emission and fuel monitoring required by this section.

Section 8. TEST METHODS AND PROCEDURES

(a) The reference methods in Appendix A of 40 CFR 60 except as provided in Regulation 1.04 shall be used to determine compliance with the standards as prescribed in sections 4, 5, and 6 of this regulation as follows:

(i) Method 1 for selection of sampling site and sample traverses;

(ii) Method 3 for gas analysis to be used whn applying Reference Methods 5, 6, and 7;

(iii) Method 5 for concentration of particulate matter and the associated moisture content;

(iv) Method 6 for concentration of sulfur dioxide;

(v) Method 7 for concentration of nitrogen oxides.

(b) For Method 5, Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller process variables or other factors, may be approved by the District. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature no greater than 160°C (320°F).

(c) For Methods 6 and 7, the sampling site shall be the same as that selected for Method 5. The sampling point in the duct shall be at the centroid of the cross section or at a point no closer to the walls than 1 m (3.28 ft). For Method 6, the sample shall be extracted at a constant rate of 1.0 liter/min., approximately.

(d) For Method 6, minimum sampling time shallbe 20 minutes and the minimum sampling volume shall be 0.02 dscm (0.71 dscf) for each sample. The arithmetic mean of 2 samples shall constitute 1 run. Samples shall be taken at approximately 30 minute intervals.

(e) For Method 7, each run shall consist of at least 4 grab samples taken at approximately 15 minute intervals. The arithmetic mean of the samples shall constitute the run value.

(f) For each run using the methods specified by paragraphs (a) (i), (a) (ii), and (a) (iii) of this section, the emissions expressed in g/million cal (lb/Million BTU) shall be determined by the following procedure:

$$E = (20.9\ CF)/(20.9 - \%\ \text{oxygen})$$

Where:

(i) E = pollutant emission g/million cal (lb/million BTU

(ii) C = pollutant concentration, g/dscm (lb/dscf), determined by Method 5,6, or 7.

(iii) % oxygen = oxygen content by volume (expressed as percent), dry basis. Percent oxygen shall be determined by using the integrated or grab sampling and analysis procedures of the Method 3 as applicable. The sample shall be obtained as follows:

a. For determination of sulfur dioxide and nitrogen oxides emissions, the oxygen sample shall be obtained simultaneously at the same point in the duct as used to obtain the samples for Methods 6 and 7 determinations respectively. For Method 7, the oxygen sample shall be obtained using the grab sampling and analysis procedures of Method 3.

b. For determination of Particulate emissions, the oxygen sample shall be obtained simultaneously by traversing the duct at the same sampling location used for each run of Method 5 under paragraph (b) of this section. Method 1 shall be used for selection of the number of traverse points except that no more than 12 sample points are required.

(iv) F = a factor as determined in paragraphs (f) (iii), (f) (iv), or (f) (v) of section 7 of this regulation.

(g) When combination of fossil fuels are fired, the heat input, expressed in cal/hr(BTU/hr), shall be determined during each testing period by multiplying tne gross calorific value of each fuel fired by the rate of each fuel burned. Gross calorific value shall be determined in accordance with A.S.T.M. methods D2015-66(72) (solid fuels) D240-76 liquid fuels), or D1826-64(70) (gaseous fuels) as applicable. The rate of fuels burned during each testing period shall be determined by suitable methods and shall be confirmed by a material balance over the steam generation system.

APPENDIX A TO REGULATION 7.06

DETERMINATION OF ALLOWABLE SULFUR DIOXIDE EMISSION

Allowable sulfur dioxide emission in pounds per million BTU per hour heat input =

$$\frac{y(a) + z(b)}{y+z}$$

Where:

y is the percent of total heat input derived from liquid or gaseous fuel

z is the percent of total heat input derived from solid fuel.

a is the allowable sulfur dioxide emission in pounds per million BTU heat input derived from liquid or gaseous fuel, and

b is the allowable sulfur dioxide emission in pounds per million BTU heat input derived from solid fuel.

APPENDIX B TO REGULATION 7.06

DETERMINATION OF ALLOWABLE NITROGEN DIOXIDE EMISSION

Allowable nitrogen dioxide emission in pounds per million BTU/hour input =

$$\frac{x(0.20)+y(0.30)+z(0.70)+w(0.60)}{x+y+z+w}$$

Where:

x is the percent of total heat input derived from gaseous fuel and,

y is the percent of total heat input derived from liquid fuel and,

z is the percent of total heat input derived from solid fuel (except lignite),

w is the percent of total heat input derived from lignite.

APPENDIX C TO REGULATION 7.06

DETERMINATION OF SPAN VALUE
(in parts per million)

Fossil fuel	Span value for sulfur dioxide	Span value for nitrogen oxides
Gas	(1)	500
Liquid	1,000	500
Solid	1,500	500
Combinations	1,000y + 1,500z	500(x+y)+1,000z

[1] Not applicable

Where:

x = the fraction of total heat input derived from gaseous fuel, and

y = the fraction of total heat input derived from liquid fossil fuel, and

z = the fraction of total heat input derived from solid fossil fuel.

APPENDIX D TO REGULATION 7.06

DETERMINATION OF F OR Fc FACTOR 7.06

$$F = \frac{[227.2(\%H) + 95.5(\%C) + 35.6(\%S) + 8.7(\%N) - 28.7(\%O)]10^{-6}}{GCV} \text{ (metric units)}$$

$$F = \frac{10^{6}[3.64(\%H) + 1.53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%O)]}{GCV}$$

$$Fc = \frac{2.0 \times 10^{-5}(\%C)}{GCV} \text{ (metric units)}$$

$$Fc = 321 \times 10^{3}(\%C) \text{ (English units)'}$$

Where:

H, C, S, N and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent) respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fire, using A.S.TM. method D3178-73 or D3176-74 (solid fuels) or computed from results using A.S.T.M. methods D1137-53(75), D1945-64(73), or D1946-67(72) (gaseous fuels) as applicable.

GCV is the gross calorific value (cal/g, BTU/lb) of the fuel combusted, determined by A.S.T.M. test methods D2015-66(72) for solid fuels and D1826-64(70) for gaseous fuels as applicable.

APPENDIX E TO REGULATION 7.06

DETERMINATION OF F OR Fc FACTOR FOR FIRING COMBINATIONS

$$F = xF_1 + yF_2 + 2F_3$$

Where:

x,y, z = the fraction of total heat input derived from gaseous, liquid, and solid fuel, respectively.

F_1, F_2, F_3 = the value of F for gaseous, liquid, and solid fuels respectively under subparagraphs (iii) and (iv) of paragraph (f) of 7 of this regulation.

$$F_c = \sum_{i = 1}^{n} X_i \, (F_c)i$$

Where:

X_i = the function of total heat input derived from each type fuel (e.g., natural gas, butane, crude bituminous coal, etc.)

(Fc)i = the applicable Fc factor for each fuel type determined in accordance with paragraphs (iii) and (iv) of paragraph (f) of section 7 of this regulation.

REGULATION 7.07. STANDARD OF PERFORMANCE FOR NEW INCINERATORS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each incinerator commenced on or after August 17, 1971, which is the affected facility.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Incinerator" means any furnace used in the process of burning waste for the purpose of reducing the volume of the waste by removing combustible matter.

(b) "Auxiliary fuel" means a substance burned in an incinerator to supply additional heat to attain temperature sufficiently high to dry and ignite wastematerial and to maintain ignition of the waste material, but which is never in contact with the waste material.

SECTION 3. STANDARDS FOR PARTICULATE MATTER

(a) No owner or operator of any affected facility shall cause, suffer, allow, or permit the emission produced by the incineration of any substance to have greater than 20 percent opacity.

(b) No owner or operator of an affected facility of 500 lb/hr up to and including 45 metric tons per day charging rate (50 tons/day) shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.23 g/dscm (0.1 gr/dscf) corrected to 12 percent carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.

(c) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator of an affected facility of more than 45 metric tons per day charging rate (50 tons/day) shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.18 g/dscm (0.08 gr/dscf) corrected to 12 percent carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.

SECTION 4. MONITORING OF OPERATIONS

The owner or operator of an affected facility of more than 45 metric tons per day charging rate (50 tons per day) shall record the daily charging rates and hours of operation

SECTION 5. NAMEPLATE

All affected facilities shall have a nameplate installed in a conspicuous place on the unit giving the manufacturer's name, model number, rated capacity, and the types of waste material for which the unit is designed.

SECTION 6. TEST METHODS AND PROCEDURES

(a) The reference methods as defined in Regulation 1.04 shall be used to determine compliance with the standard prescribed in section 3 of this regulation.

(b) The sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be 0.85 dscm (30.0 dscf) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the District.

(c) If a wet scrubber is used, the gas analysis sample shall reflect flue gas conditions after the scrubber, allowing for carbon dioxide adsorption by sampling the gas on the scrubber inlet and outlet sides according to either the procedure under paragraphs (i) through (v) of this section or the procedure under section 7 of this regulation.

(i) The outlet sampling site shall be the same as for the particulate matter measurement.

(ii) Randomly select 9 sampling points within the cross section at both the inlet and outlet sampling sites. Use the first set of 3 for the first run, the second set for the second run, and the third set for the third run.

(iii) Simultaneously with each particulate matter run, extract and analyze for carbon dioxide, an integrated gas sample traversing the 3 sample points and sampling at each point for equal increments of time. Conduct the runs at both inlet and outlet sampling sites.

(iv) Measure the volumetric flow rate at the inlet during each particulate matter run using the full number of traverse points. For the inlet make 2 full velocity traverses approximately 1 hour apart during each run and average the results. The outlet volumetric flow rate may be determined from the particulate matter run.

(v) Calculate the adjusted carbon dioxide percentage using the equation in Appendix A of this regulation.

SECTION 7. ALTERNATIVE PROCEDURES

Alternatively, the following procedures may be substituted for the procedures under paragraphs (iii), (iv), and (v) of paragraph (c) of section 6.

(a) Simultaneously with each particulatematter run, extract and analyze for carbon dioxide, oxygen, and nitrogen an integrated gas sample traversing the 3 sample points and sampling for equal increments of time at each point. Conduct the runs at both the inlet and outlet sampling sites.

(b) After completing the analysis of the gas sample, calculate the percentage of excess air for both the inlet and outlet sampling sites.

(c) Calculate the adjusted carbon dioxide percentage using the equation in Appendix B of this regulation.

(d) Particulate matter emissions, expressed in g/dscm, shall be corrected to 12 percent carbon dioxide by using the formula in Appendix C of this regulation.

SECTION 8. EMISSION MONITORING

A continuous monitoring system for the measurement of opacity of emissions discharged into the atmosphere from each incinerator with a charging capacity of more than 45 metric tons per day (50 tons/day) shall be installed, calibrated, maintained, and operated by the owner or operator subject to the provisions of this regulation. This requirement does not apply to those incinerators using wet scrubbers.

APPENDIX A TO REGULATION 7.07

CALCULATION FOR ADJUSTED CARBON DIOXIDE PERCENTAGE FOR INCINERATORS

$\%CO_2A = \%\ CO_2D\ (Q_i/Q_o)$

where:

$\%CO_2A$ is the adjusted carbon dioxide percentage which removes the effect of carbon dioxide absorption and dilution air.

$\%CO_2D$ is the percentage of carbon dioxide measured before the scrubber, dry basis.

Q_i is the volumetric flow rate before the scrubber, the average of two (2) runs, dscf/min, and

Q_o is the volumetric flow rate after the scrubber, dscf/min.

APPENDIX B TO REGULATION 7.07

CALCULATION FOR ADJUSTED CARBON DIOXIDE PERCENTAGE INCINERATOR, ALTERNATE PROCEDURE

$$\%CO_2A = \%CO_2D \quad \frac{100 + \%\ EA_i}{100 + \%\ EA_o}$$

where:

$\%CO_2A$ is the adjusted outlet carbon dioxide percentage,

$\%CO_2D$ is the percentage of carbon dioxide measured before the scrubber, dry basis,

$\%EA_i$ is the percentage of excess air at the inlet, and

$\%EA_o$ is the percentage of excess air at the outlet.

APPENDIX C TO REGULATION 7.07

PARTICULATE EMISSIONS CORRECTION CALCULATION FOR INCINERATORS, ALTERNATE PROCEDURE

$$C_{12} = \frac{12\ C_p}{\%\ CO_2}$$

where:

C_{12} is the concentration of particulate matter corrected to twelve (12) percent carbon dioxide,

C_p is the concentration of particulate matter and,

$\%CO_2$ is the percentage of measured carbon dioxide or when applicable, the adjusted outlet carbon dioxide percentage as determined by Appendix B to this regulation.

REGULATION 7.08. STANDARD OF PERFORMANCE FOR NEW PROCESS OPERATIONS

SECTION 1. APPLICABILITY

The provisions of this section shall apply to each process operation which is the affected facility not otherwise regulated by other sections of this regulation and which commenced construction after July 2, 1975.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Process operation" means any method, form, action, operation, or treatment of manufacturing or proessing, and shall include any storage or handling of materials or products, before, during, or after manufacturing or processing.

(b) "Process weight" means the total weight of all materials introduced into any affected facility which may cause any emission of particulate matter, but does not include liquid and gaseous fuels charged, air, or uncombined water.

(c) "Process weight rate" means a rate established as follows:

(i) For continuous or long-run steady state operations, the total process weight for the entire period of continuous operation or for a typical portion thereof divided by the number of hours of such period or portion thereof;

(ii) For cyclical or batch unit operations, or unit processes, the total process weight for a period that covers a complete operation or an integral number of cycles divided by the hours of actual process operation during such a period.

Where the nature of any process operation or the design of any equipment is such as to permit more than one interpretation of this definition, the interpretation which results in the minimum value for allowable emission shall apply.

(d) "Affected facility" as related to process operations means the last operation preceding the emission of air contaminants which results:

(i) In the separation of the air contaminant from the process materials; or

(ii) In the conversion of the process materials into air contaminants, but does not include an air abatement operation.

(e) "Duplicate operation" means any combination of two or more individual process operations of any size that are of the same nature and are located in the same source.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) No owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility, or from any air pollution control equipment installed on any affected facility, any gases which may contain particulate matter which:

(i) is equal to or greater than 20 percent opacity; or,

(ii) is in excess of the quantity specified in Table A of this regulation.

(b)

(i) The process weight rate entry to be used in table A for duplicate new process operations is the total, or combined process weight rate of all the individual component operations.

(ii) In the event of expansion of any process or duplicate operations which were in existence or under construction as of September 1, 1976, by the addition of a new process or new duplicate operation, the total allowable emission rate for all process or duplicate operations shall be determined by the following equation:

$$F = B + D - E$$

Where A = Total process weight for those process operations in existence or under construction as of September 1, 1976.

B = Allowable emission rate for existing operations determined by entering A into table A of Regulation 6.09.

C = Total process weight for both the new and existing process operations.

D = Allowable emission rate that would be obtained if the new and existing process operations were treated as new operations determined by entering C into table A of this section.

E = Allowable emission rate that would be obtained if the existing operations were treated as new operations determined by entering A into table A of this section.

F = Total allowable emission rate for new and existing process operations.

(iii) To determine an allowable emission rate for each stack when duplicate operations vent through separate stacks, the following formula shall be used.

$$E_s = E_t\left(\frac{P_s}{P_t}\right)$$

Where E_s = Allowable emission rate for the individual stack

E_t = Total allowable emission rate for the duplicate operation (from table A)

P_s = Process weight rate for process operations vented through individual stack

P_t = Total process weight rate for the duplicate operation

(iv) Where a single process operation is vented through multiple stacks, the allowable emission rate for all stacks venting the source shall be equal to the allowable emission rate as if the source vented through a single stack.

SECTION 4. STANDARD FOR NITROGEN OXIDES

No owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility or from any air pollution control equipment installed on any affected facility, any NO_x fumes in excess of:

(a) 300 ppm by volume, expressed as NO_2; or

(b) an invisible discharge.

TABLE A OF REGULATION 7.08

ALLOWABLE RATE OF PARTICULATE EMISSION BASED ON PROCESS WEIGHT

PROCESS WEIGHT RATE		MAXIMUM ALLOWABLE EMISSION RATE
Lb/Hr.	Tons/Hr.	Lb/Hr.
100 or less	0.05 or less	0.56
200	0.10	0.86
400	0.20	1.32
600	0.30	1.70
800	0.40	2.03
1000	0.50	2.34
1500	0.75	3.00
2000	1.00	3.59
2500	1.25	4.12
3000	1.50	4.62
3500	1.75	5.08
4000	2.00	5.52
5000	2.50	6.34
6000	3.00	7.09
7000	3.50	7.81
8000	4.00	8.48
9000	4.50	9.12
10000	5.00	9.74
12000	6.00	10.90
16000	8.00	13.03
18000	9.00	14.02
20000	10.00	14.97
30000	15.00	19.24
40000	20.00	23.00
50000	25.00	26.41
60000	30.00	29.57
70000	35.00	30.57
80000	40.00	31.23
90000	45.00	31.83
100000	50.00	32.37
120000	60.00	33.33
140000	70.00	34.16
160000	80.00	34.90
200000	100.00	36.17
1000000	500.00	46.79
2000000	1000.00	52.28
6000000	3000.00	62.32

Interpolation of the data for process weight rates up to 60,000 lb/hr shall be accomplished by use of the equation $E = 3.59\ P^{0.62}$ and interpolation and extrapolation of the data for process weight rates in excess of 60,000 lb/hr shall be accomplished by the use of the equation

$$E = 17.31\ P^{0.16}$$

Where E = rate of emission in lb/hr
P = process weight rate in tons/hr

REGULATION 7.09. STANDARD OF PERFORMANCE FOR NEW PROCESS GAS STREAMS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility, which means any process gas stream, which:

(a) is not elsewhere subject to a standard of performance within these regulations with respect to hydrogen sulfide, sulfur dioxide, or carbon monoxide; and

(b) commenced on or after April 19, 1972.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Process gas stream" means any gas stream emitted from any process including, but not limited to petroleum refineries, by-products coke plants, grey iron cupolas, blast furnace, and basic oxygen steel furnace.

SECTION 3. STANDARD FOR HYDROGEN SULFIDE

No person shall cause, suffer, allow or permit the emission or combustion of hydrogen sulfide in a process gas stream to exceed 10 grains per 100 dscf at zero percent oxygen.

SECTION 4. STANDARD FOR SULFUR DIOXIDE

No person shall cause, suffer, allow or permit the emission of sulfur dioxide in a process gas stream to exceed 28.63 grains per 100 dscf (250 ppm) at zero percent oxygen.

SECTION 5. STANDARD FOR CARBON MONOXIDE

(a) No person shall emit carbon monoxide gases from a process or waste gas stream unless they are burned at 1,300° F for 0.5 seconds or greater in a direct flame afterburner or equivalent device equipped with an indicating pyrometer which is positioned in the working area at the operator's eye level.

(b) No person shall emit a carbon monoxide waste gas stream from any catalyst regeneration of a petroleum cracking system, petroleum fluid coker, or other petroleum process into the atmosphere, unless the waste gas stream is burned at 1,300° F for 0.5 seconds or greater in a direct flame afterburner, or equivalent, equipped with an indicating pyrometer which is positined in the working area at the operator's eye level.

REGULATION 7.10. STANDARD OF PERFORMANCE FOR STEEL PLANTS USING NEW BASIC OXYGEN PROCESS FURNACES

SECTION 1. APPLICABILITY

Provisions of this regulation are applicable to the following affected facilities (associated with steel plants) commenced on or after June 11, 1973: basic oxygen process furnaces, associated metallurgical equipment, and dust-handling equipment.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Basic oxygen process furnaces (BOPF)" means any furnace producing steel by charging scrap steel, hot metal and flux materials into a vessel and introducing a high volume of an oxygen-rich gas.

(b) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the control device and located at or near the control device for a BOPF and/or associated equipment subject to this regulation.

(c) "Control device" means the air pollution control equipment used to remove from the effluent gas stream, particulate matter generated by a BOPF and/or associated equipment.

(d) "Capture system" means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by a BOPF and associated equipment to the air pollution control device.

(e) "Steel production cycle" means the operations required to produce each batch of steel and includes the following major functions: scrap preheating, scrap charging, hot metal charging, primary oxygen blowing and tapping.

(f) "Charge" means the addition of steel scrap or other materials into a BOPF followed by molten pig iron.

(g) "Tap" means the pouring of molten steel from a BOPF.

(h) "Startup" means the setting into operation for the first steel production cycle of a reline BOPF, or a BOPF which has been out of production for a minimum continuous time period of 8 hours.

SECTION 3. STANDARD FOR PARTICULATE MATTER

On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause to be discharged into the atmosphere from a basic oxygen process furnace and/or associated metallurgical equipment located in the same shop any gases which:

(a) Exit from a control device and contain particulate matter in excess of .022 gr/dscf.

(b) Exit from a control device and exhibit opacity of

(i) 10 percent or more, except that an opacity of greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(ii) 20 percent or more from a sealed, concentrated exhaust.

SECTION 4. MONITORING OF OPERATIONS

(a) The owner or operator of an affected facility shall maintain a single time-measuring instrument which shall be used in recording daily the time and duration of each steel production cycle and the time and duration of each diversion of exhaust gases from the main stack serving the BOPF.

(b) The owner or operator of any affected facility that uses venturi scrubber emission control equipment shall install, calibrate, maintain and continuously operate monitoring devices as follows.

REGULATION 7.11. STANDARD OF PERFORMANCE FOR NEW ASPHALT CONCRETE PLANTS AND ASPHALT PAVING OPERATIONS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to all asphalt paving operations (except as provided in section 5 of this regulation) and to each asphalt concrete plant commenced on or after June 11, 1973. For the purpose of this regulation an asphalt concrete plant is comprised of any combination of the following: dryers, systems for screening, handling storing, and weighing aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing asphalt concrete; and the loading, transfer and storage systems associated with emission control systems.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Asphalt Paving Operations" means the use of asphalt in any paving operation, public or private, including, but not limited to: paving of roads, paving of parking lots, maintenance operations, application of tack coats, sealants, etc.

(b) "Asphalt" means a dark-brown to black cementitious material (solid, semisolid, or liquid in consistency) in which the predominating constituents are bitumens which occur in nature as such or which are obtained as residue in refining petroleum.

(c) "Cutback asphalt" means asphalt cement which has been liquefied by blending with volatile organic compounds (diluents). Upon exposure to atmospheric conditions the volatile organic compounds evaporate, leaving the asphalt cement to perform its function.

(d) "Emulsified asphalt" means an emulsion of asphalt cement, volatile organic compounds, and water which contains a small amount of an emulsifying agent.

(e) "Maintenance Operation" means patching of holes and breaks in pavement as it necessary for safety.

(f) "Penetrating Prime Coat" means an application of low-viscosity liquid asphalt to an absorbent surface. It is used to prepare an untreated base for an asphalt surface. The prime coat penetrates the base and plugs the voids, hardens the top, and helps bind it to the overlying asphalt course. It also reduces the necessity of maintaining an untreated base course prior to placing the asphalt pavement.

(g) "Unacceptable emulsion asphalt" means any emulsion asphalt which yields more than 7 percent by volume of oil distillate when tested according to AASHTO T 59-78, Section 7 through 9.

(h) "Asphalt concrete plant" means any facility, as described in Section 2 of this regulation, used to manufacture asphalt concrete by heating and drying aggregate and mixing with asphalt cements.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from any affected facility any gases which:

(i) Contain particulate matter in excess of 90 mg/dscm (0.04 gr/dscf).

(ii) Exhibit 20 percent opacity, or greater. Where the presence of uncombined water is the only reason for failure to meet the requirements of this section, such failure shall not be a violation.

SECTION 4. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

On or after April 1, 1980, no person shall use, or sell for use, manufacture, mix, or store cutback asphalts or unacceptable emulsion asphalts for asphalt paving operations except as noted in Section 5 of this regulation.

(i) A monitoring device for the continuous measurement of the pressure loss through the venturi construction of the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± 250 Pa (± one inch water).

(ii) A monitoring device for the continuous measurement of the water supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± five (5) percent of the design water supply pressure. The monitoring device's pressure sensor or pressure tap must be located close to the water discharge point. The Department may be consulted for approval of alternative locations for the pressure sensor or tap.

(iii) All monitoring devices shall be synchronized each day with the time-measuring instrument used under paragraph (a) of this section. The chart recorder error directly after synchronization shall not exceed 0.08 cm (one-thirty-second of an inch).

(iv) All monitoring devices shall use chart recorders which are operated at a minimum chart speed of 3.8 cm/hr (1.5 in/hr).

(v) All monitoring devices are to be recalibrated annually, and at other times as the District may require, in accordance with the manufacturer's recommended procedures.

(vi) Any owner or operator subject to requirements under paragraph (b) of this section shall report for each calendar quarter all measurements over any three-hour period that average more than 10 percent below the average levels maintained during the most recent performance test conducted under Section 5 in which the affected facility demonstrated compliance with the standard under Section 3. The accuracy of the respective measurements not to exceed the values specified in paragraph (b)(i) and (ii) of this section may be taken into consideration when determining the measurement results that must be reported.

SECTION 5. TEST METHODS AND PROCEDURES

(a) Reference methods in Appendix A of 40 CFR 60, except as provided under Regulation 1.04, shall be used to determine compliance with the standards prescribed under section 3 of this regulation as follows:

(i) Method 5 for concentration of particulate matter and associated moisture content;

(ii) Method 1 for sample and velocity traverses;

(iii) Method 2 for volumetric flow rate;

(iv) Method 3 for gas analysis; and

(v) Method 9 for visible emissions.

For the purpose of this regulation, opacity observations taken at 15 second intervals immediately before and after a diversion of exhaust gases from the stack may be considered to be consecutive for the purpose of computing an average opacity for a 6 minute period. Observations taken during a diversion shall not be used in determining compliance with the opacity standard.

(b) For Reference Method 5, the sampling for each run shall continue for an integral number of cycles with total duration of at least 60 minutes. The sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times when necessitated by process variables or other factors, may be approved by the District. A cycle shall start at the beginning of either the scrap preheat or the oxygen blow and shall terminate immediately prior to tapping.

(c) Sampling of flue gases during each steel production cycle shall be discontinued whenever all flue gases are diverted from the stack and shall be resumed after each diversion period.

REGULATION 7.12. STANDARDS OF PERFORMANCE FOR NEW STORAGE VESSELS FOR VOLATILE ORGANIC COMPOUNDS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility which means each new storage vessel for volatile organic compounds and is commenced on or after April 9, 1972 and has a storage capacity greater than 250 gallons.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Storage vessel" means any tank, reservoir, or container used for the storage of volatile organic compounds, but does not include:

(i) Pressure vessels which are designed to operate in excess of 15 pounds per square inch gauge without emissions to the atmosphere except under emergency conditions,

(ii) Subsurface caverns or porous rock reservoirs,

(iii) Underground tanks if the total volume of volatile organic compounds added to and taken from a tank annually does not exceed twice the volume of the tank, or

(iv) Portable tanks of less than 500 gallons capacity which are used for the temporary storage of a product or intermediate product in a manufacturing process.

(b) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than 0.1 mm Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(c) "True vapor pressure" means the equilibrium partial pressure exerted by a volatile organic compound liquid as determined in accordance with methods specified by the District.

(d) "Floating roof" means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the volatile organic compound being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

(e) "Vapor recovery system" means a vapor gathering system capable of collecting all volatile organic compounds discharged from the storage vessel and a vapor disposal system capable of processing such volatile organic compounds so as to prevent their emission to the atmosphere.

(f) "Reid vapor pressure" is the absolute vapor pressure of certain volatile organic compounds as determined by methods specified by the District.

(g) "Submerged fill pipe" means any fill pipe the discharge of which is entirely submerged when the liquid level is 6 inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean every fill pipe the discharge opening of which is entirely submerged when the liquid level is 2 times the fill pipe diameter above the bottom of the tank.

(h) "Seal" means a sliding seal, either a metallic-shoe-type seal or a nonmetallic-resilient-type seal which prevents volatile organic compounds from escaping around the perimeter of the floating roof.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

The owner or operator of any storage vessel to which this regulation applies shall store volatile organic compounds as follows:

(a) If the storage vessel has a storage capacity greater than 40,000 gallons and if the true vapor pressure of the volatile organic compounds, as stored, is equal to or greater than 78 mm Hg (1.5 psia) but not greater than 570 mm Hg (11.1 psia) the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.

SECTION 5. EXEMPTIONS

The provisions of this regulation shall not apply to the following asphalt paving operations:

(a) Application of penetrating prime coat;

(b) Maintenance operations during the months of November, December, January, February, and March.

SECTION 6. TEST METHODS AND PROCEDURES

(a) The reference methods specified below from Appendix A of 40 CFR 60 shall be used to determine compliance with the standards prescribed in section 3, unless an equivalent or alternative method has been approved by the U. S. Environmental Protection Agency.

(i) Method 5 for the concentration of particulate matter and the associated moisture content.

(ii) Method 1 for sample and velocity traverses.

(iii) Method 2 for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(b) For determination of concentration of particulate matter, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min), except those shorter sampling times (when necessitated by process variables or other factors) which are approved by the District.

(b) If the storage vessel has a storage capacity greater than 40,000 gallons and if the true vapor pressure of the volatile organic compounds as stored is greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

(c) If the storage vessel has a storage capacity greater than 250 gallons but less than or equal to 40,000 gallons and the vapor pressure of volatile organic compounds, as stored, is equal to or greater than 1.5 psia as stored, it shall be equipped with a permanent submerged fill pipe or a vapor recovery system.

SECTION 4. OPERATING REQUIREMENTS

(a) There shall be no visible holes, tears, or other openings in the seal or any seal fabric; and,

(b) All openings, except stub drains, shall be equipped with covers, lids, or seals such that:

  (i) the cover, lid, or seal is in the closed position at all times except when in actual use; and

  (ii) automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports; and

  (iii) rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

SECTION 5. MONITORING OF OPERATIONS

(a) The owner or operator of any storage vessel with a capacity greater than 40,000 gallons to which this regulation applies shall, for each such storage vessel, maintain a file of each type of volatile organic compound stored, of the typical Reid vapor pressure of each type of petroleum liquid stored, and of the dates of storage. Dates on which the storage vessel is empty shall be shown.

(b) The owner or operator of any storage vessel with a capacity greater than 40,000 gallons to which this section applies shall, for each such storage vessel, determine and record the average monthly storage temperature and true vapor pressure of the volatile organic compound stored at such temperature if:

  (i) The volatile organic compound has a true vapor pressure, as stored, greater than 26 mm Hg (0.5 psia) but less than 78 mm Hg (1.5 psia) and is stored in a storage vessel other than one equipped with a floating roof, a vapor recovery system or their equivalents; or

  (ii) The volatile organic compound has a true vapor pressure, as stored, greater than 470 mm Hg (9.1 psia) and is stored in a storage vessel other than one equipped with a vapor recovery system or its equivalent.

(c) The average monthly storage temperature is an arithmetic average calculated for each calendar month, or portion thereof, if storage temperatures are determined at least once every 7 days.

(d) The true vapor pressure shall be determined by the procedures specified by the District. This procedure is dependent upon determination of the storage temperature and the Reid vapor pressure, which requires sampling of the volatile organic compound in the storage vessels. Unless the District requires in specific cases that the stored volatile organic compound be sampled, the true vapor pressure may be determined by using the average monthly storage temperature and the typical Reid vapor pressure. For those liquids for which certified specifications limiting the Reid vapor pressure exist, the Reid vapor pressure may be used. For other liquids, supporting analytical data must be made available on request to the District when typical Reid vapor pressure is used.

SECTION 6. COMPLIANCE

The new affected facility shall comply with the requirements of this regulation on startup.

(n) "Classification date" means June 11, 1973 for any fluid catalytic cracking unit catalyst regenerator or fuel gas combustion device and October 4, 1976 for any Claus recovery plant.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from any fluid catalytic cracking unit catalyst regenerator:

(i) Particulate matter in excess of 1.0 kg/1000 kg (1.0 lb/1000 lb) of coke burn-off in the catalyst regenerator.

(ii) Gases exhibiting greater than 30 percent opacity, except for one six minute average opacity reading in any one hour period.

(b) Where the gases discharged by the fluid catalytic cracking unit catalyst regenerator pass through an incinerator or waste heat boiler in which auxiliary or supplemental liquid or solid fossil fuel is burned, particulate matter in excess of that permitted by paragraph (a) (i) of this section may be emitted to the atmosphere, except that the incremental rate of particulate matter emissions shall not exceed 43.0 g/MJ (0.10 lb/million BTU) of heat input attributable to such liquid or solid fossil fuel.

SECTION 4. STANDARD FOR CARBON MONOXIDE

On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from the fluid catalytic cracking unit catalyst regenerator any gases which contain carbon monoxide in excess of 0.050 percent by volume.

SECTION 5. STANDARD FOR SULFUR DIOXIDE

On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall:

(a) Burn in any fuel gas combustion device any fuel gas which contains hydrogen sulfide in excess of 230 mg/dscm (0.10 gr/dscf), except that the gases resulting from the combustion of fuel gas may be treated to control sulfur dioxide emissions provided the owner or operator demonstrates to the staisfaction of the District that this is as effective in preventing sulfur dioxide emissions to the atmosphere as restricting the hydrogen sulfide concentration in the fuel gas to 230 mg/dscm or less. The combustion in a flare of process upset gas, or fuel gas which is released to the flare as a result of relief valve leakage, is exempt from this paragraph.

(b) Discharge or cause the discharge of any gases into the atmosphere from any Claus sulfur recovery plant containing in excess of:

(i) 0.025 percent by volume of sulfur dioxide at zero percent oxygen on a dry basis if emissions are controlled by an oxidation control system, or a reduction control system followed by incineration; or

(ii) 0.030 percent by volume of reduced sulfur compounds and 0.0010 percent by volume of hydrogen sulfide calculated as sulfur dioxide at zero percent oxygen on a dry basis if emissions are controlled by a reduction control system not followed by incineration.

SECTION 6. EMISSION MONITORING

(a) Continuous monitoring systems shall be installed, calibrated, maintained, and operated by the owner or operator as follows:

(i) A continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the fluid catalytic cracking unit catalyst regenerators. The continuous monitoring system shall be spanned at 60, 70 or 80 percent opacity.

(ii) An instrument for continuously monitoring and recording the concentration of carbon monoxide in gases discharged into the atmosphere from fluid catalytic cracking unit catalyst regenerators. The span of this continuous monitoring system shall be 1,000 ppm.

REGULATION 7.13 STANDARD OF PERFORMANCE FOR NEW PETROLEUM REFINERIES

SECTION 1. APPLICABILITY

(a) The provisions of this regulation are applicable to the following affected facilities in petroleum refineries: fluid catalytic cracking unit catalyst regenerators, fuel gas combustion devices, and all Claus sulfur recovery plants except Claus plants of 20 long tons per day (LTD) or less associated with a small petroleum refinery. The Claus sulfur recovery plant need not be physically located within the boundaries of a petroleum refinery to be an affected facility, provided it processes gases produced within a petroleum refinery.

(b) Any fluid catalytic cracking unit catalyst regenerator or fuel gas combustion device under paragraph (a) which commences on or after the classification date defined in section 2 (n) or any Claus sulfur recovery plant under paragraph (a) of this subsection which commences on or after the classification date defined in section 2 of this regulation is subject to the requirements of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives.

(b) "Petroleum" means the crude oil removed from the earth and the oils derived from tar sands, shale and coal.

(c) "Process gas" means any gas generated by a petroleum refinery process unit, except fuel gas and process upset gas as defined in this section.

(d) "Fuel gas" means any gas which is generated by a petroleum refinery process unit and which is combusted, including any gaseous mixture of natural gas and fuel gas which is combusted.

(e) "Process upset gas" means any gas generated by a petroleum refinery process unit as a result of startup, shutdown, upset or malfunction.

(f) "Refinery process unit" means any segment of the petroleum refinery in which a specific processing operation is conducted.

(g) "Fuel gas combustion device" means any equipment, such as process heaters, boilers and flares used to combust fuel gas, but does not include fluid coking unit and fluid catalytic cracking unit incinerator-waste heat boilers, facilities combusting coke oven gas in a by-product coke manufacturing plant, or facilities in which gases are combusted to produce sulfur or sulfuric acid.

(h) "Coke burn-off" means the coke removed from the surface of the fluid catalytic cracking unit catalyst by combustion in the catalyst regenerator. The rate of coke burn-off is calculated by the formula specified in Appendix A of this regulation.

(i) "Claus sulfur recovery plant" means a process unit which recovers sulfur from hydrogen sulfide by a vapor-phase catalytic reaction of sulfur dioxide and hydrogen sulfide.

(j) "Oxidation control system" means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to sulfur dioxide.

(k) "Reduction control system" means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to hydrogen sulfide.

(l) "Reduced sulfur compounds" means hydrogen sulfide, carbonyl sulfide and carbon disulfide.

(m) "Small petroleum refinery" means a petroleum refinery which has a crude oil processing capacity of 50,000 barrels per stream day or less, and which is owned or controlled by a refinery with a total combined crude oil processing capacity of 137,500 barrels per stream day or less.

followed by incineration; or any 12-hour period during which the average concentration of hydrogen sulfide or reduced sulfur compounds in the gases discharged into the atmosphere of any Claus sulfur plant subject to section 5 (b) exceeds 10 ppm or 300 ppm, respectively, at zero percent oxygen and on a dry basis if compliance is achieved through the use of a reduction control system not followed by incineration.

c. Any 6-hour period during which the average emissions (arithmetic average of 6 contiguous one hour periods) of sulfur dioxide as measured by a continuous monitoring system exceed the standard under section 5.

SECTION 7. TEST METHODS AND PROCEDURES

(a) The reference methods in Appendix A of 40 CFR 60 shall be used to determine compliance with the provisions in sections 3, 4 and 5 as follows:

(i) For gases released to the atmosphere from the fulud catalytic cracking unit catalyst regenerator:
Method 5 for the concentration of particulate matter and moisture content;
Method 1 for sample and velocity traverses; and
Method 2 for velocity and volumetric flow rate.

(ii) For Method 5, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.015 dscm/min (0.53 dscf/min), except that shorter sampling times may be approved by the District when process variables or other factors preclude sampling for at least 60 minutes.

(iii) For exhaust gases from the fluid catalytic cracking unit catalyst regenerator prior to the emission control system; the integrated sample techniques of Method 3 and Method 4 for gas analysis and moisture content, respectively; Method 1 for velocity traverses; and Method 2 for velocity and volumetric flow rate.

(iv) Coke burn-off rate shall be determined by the formula in Appendix A of this regulation.

(v) Particulate emissions shall be determined by the equation in Appendix B of this regulation.

(vi) For each run emissions expressed in kg/1000 kg (lb/1000 lb) of coke burn-off in the catalyst regenerator shall be determined by the equation in Appendix C of this regulation.

(vii) In those instances in which auxiliary liquid or solid fossil fuels are burned in an incinerator-waste heat boiler, the rate of particulate matter emissions permitted under section 3 (b) must be determined. Auxiliary fuel heat input, expressed in millions of cal/hr (MM BTU/hr) shall be calculated for each run by fuel flow rate measurement and analysis of the liquid or solid auxiliary fossil fuels. For each run, the rate of particulate emissions permitted under section 3 (b) shall be calculated from the equation in Appendix D of this regulation.

(b) For the purpose of determining compliance with section 4, the integrated sample technique of Method 10 shall be used. The sample shall be extracted at a rate proportional to the gas velocity at a sampling point near the centroid of the duct. The sampling time shall not be less than 60 minutes.

(c) For the purpose of determining compliance with section 5 (a), Method 11 shall be used to determine the concentration of hydrogen sulfide and Method 6 shall be used to determine the concentration of sulfur dioxide.

(i) If Method 11 is used, the gases sampled shall be introduced into the sampling train at approximately atmospheric pressure. Where refinery fuel gas lines are operating at pressures substantially above atmosphere, this may be accomplished with a flow control valve. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line. The minimum sampling time shall be 10 minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples of equal sampling time shall constitute one run. Samples shall be taken at approximately one hour intervals. For most fuel gases, sample

(iii) A continuous monitoring system for the measurement of sulfur dioxide in the gases discharged into the atmosphere from the combustion of fuel gases (except where a continuous monitoring system for the measurement of hydrogen sulfide is installed under paragraph (iv) of this section). The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 of 40 CFR 60 and for calibration checks shall be sulfur dioxide. The span shall be set at 100 ppm. For conducting monitoring system performance evaluations, Reference Method 6 shall be used.

(iv) An instrument for continuously monitoring and recording concentrations of hydrogen sulfide in fuel gases burned in any fuel gas combustion device, if compliance with section 5 (a) is achieved by removing hydrogen sulfide from the fuel gas before it is burned; fuel gas combustion devices having a common source of fuel gas may be monitored at one location, if monitoring at this location accurately represents the concentration of hydrogen sulfide in the fuel gas burned. The span of this continuous monitoring system shall be 300 ppm.

(v) An instrument for continuously monitoring and recording concentrations of sulfur dioxide in the gases discharged into the atmosphere from any Claus sulfur recovery plant if compliance with section 5 (b) is achieved through the use of an oxidation control system or a reduction control system followed by incineration. The span of this continuous monitoring system shall be set at 500 ppm.

(vi) An instrument(s) for continuously monitoring and recording the concentration of hydrogen sulfide and reduced sulfur compounds in the gases discharged into the atmosphere from any Claus sulfur recovery plant if compliance with section 5 (b) is achieved through the use of a reduction control system not followed by incineration. The span(s) of this continuous monitoring system(s) shall be set at 20 ppm for monitoring and recording the concentration of hydrogen sulfide and 600 ppm for monitoring and recording the concentration of reduced sulfur compounds.

(b) The average coke burn-off rate (thousands of kilogram/hr) and hours of operation for any fluid catalytic cracking unit catalyst regenerator subject to section 3 or 4 shall be recorded daily.

(c) For any fluid catalytic cracking unit catalyst regenerator which is subject to section 3 and which utilizes an incinerator-waste heat boiler to combust the exhaust gases from the catalyst regenerator, the owner or operator shall record daily the rate of combustion of liquid or solid fossil fuels (liters/hr or kilograms/hr) and the hours of operation during which liquid or solid fossil fuels are combusted in the incinerator-waste heat boiler.

(d) For the purpose of reports under Regulation 7.05, periods of excess emissions that shall be reported are defined as follows:

(i) Opacity. All one-hour periods which contain 2 or more 6-minute periods during which the average opacity as measured by the continuous monitoring system exceeds 30 percent.

(ii) Carbon monoxide. All hourly periods during which the average carbon monoxide concentration in the gases discharged into the atmosphere from any fluid catalytic cracking unit catalyst regenerator subject to section 4 exceeds 0.050 percent by volume.

(iii) Sulfur dioxide:

a. Any 3-hour period during which the average concentration of hydrogen sulfide in any fuel gas combusted in any fuel gas combustion device subject to section 5 (a) exceeds 230 mg/dscm(0.10 gr/dscf), if compliance is achieved by removing hydrogen sulfide from the fuel gas before it is burned; or any three hour period during which the average concentration of sulfur dioxide in the gases discharged into the atmosphere from any fuel gas combustion device subject to section 6 (a) exceeds the level specified in section 5 (a) if compliance is achieved by removing sulfur dioxide from the combusted fuel gases.

b. Any 12-hour period during which the average concentration of sulfur dioxide in the gases discharged into the atmosphere from any Claus sulfur recovery plant subject to section 5 (b) exceeds 250 ppm at zero percent oxygen on a dry basis if compliance with section 5 (b) (ii) is achieved through the use of an oxidation control system or a reduction control system times exceeding 20 minutes may result in depletion of the collecting solution, although fuel gases containing low concentrations of hydrogen sulfide may necessitate sampling for longer periods of time.

(ii) If Method 6 is used, Method 1 shall be used for velocity traverses and Method 2 for determining velocity and volumetric flow rate. The sampling site for determining sulfur dioxide concentration by Method 6 shall be the same as for determining volumetric flow rate by Method 2. The sampling point in the duct for determining sulfur dioxide concentration by Method 6 shall be at the centroid of the cross section if the cross sectional area is less than 5 square meters (54 ft. squared) or at a point no closer to the walls than one meter (39 inches) if the cross sectional area is 5 square meters or more and the centroid is more than one meter from the wall. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. The minimum sampling time shall be 10 minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples of equal sampling time shall constitute one run. Samples shall be taken at approximately one hour intervals.

(d) For the purpose of determining compliance with section 5 (b), Method 6 shall be used to determine the concentration of sulfur dioxide and Method 15 shall be used to determine the concentration of sulfur dioxide and reduced sulfur compounds.

(i) If Method 6 is used, the procedure outlined in paragraph (c) (ii) of this section shall be followed except that each run shall span a minimum of 4 consecutive hours of continuous sampling. A number of separate samples may be taken for each run, provided the total sampling time of these samples adds up to a minimum of 4 consecutive hours. Where more than one sample is used, the average sulfur dioxide concentration for the run shall be calculated as the time weighted average of the sulfur dioxide concentration for each sample according to the formula in Appendix E of this regulation.

(ii) If Method 15 is used, each run shall consist of 16 samples taken over a minimum of three hours. The sampling point shall be at the centroid of the cross section of the duct if the cross sectional area is less than 5 square meters (54 ft^2) or at a point no closer to the walls than one meter (39 inches) if the cross sectional area is 5 square meters or more and the centroid is more than one meter from the wall. To insure minimum residence time for the sample inside the sample lines, the sampling rate shall be at least 3 liters/minute (0.1 cfm). The sulfur dioxide equivalent for each run shall be calculated as the arithmetic average of the sulfur dioxide equivalent of each sample during the run. Reference Method 4 shall be used to determine the moisture content of the gases. The sampling point for Method 4 shall be adjacent to the sampling point for Method 15. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. Each run shall span a minimum of 4 consecutive hours of continuous sampling. A number of separate samples may be taken for each run provided the total sampling time of these samples adds up to a minimum of 4 consecutive hours. Where more than one sample is used, the average moisture content for the run shall be calculated as the time weighted average of the moisture content of each sample according to the formula in Appendix F of this regulation.

(e) An owner or operator of an affected facility may request the District to determine opacity of emissions from the affected facility during any performance test.

APPENDIX A TO REGULATION 7.13

Formula for Coke Burn-off Rate

$$R_c = 0.2982\ Q_{RE}(\%CO_2 + \%CO) + 2.088\ Q_{RA} - 0.0994Q_{RE}\left(\frac{\%CO}{2} + \%CO_2 + \%O_2\right) \text{ (metric units)}$$

or

$$R_c = 0.0186\ Q_{RE}(\%CO_2 + \%CO) + 0.1303\ Q_{RA} - 0.0062\ Q_{RE}\left(\frac{\%CO}{2} + \%CO_2 + \%O_2\right) \text{ (English units)}$$

Where:

R_c = coke burn-off rate, kg/hr (lb/hr)

0.2982 = metric units material balance factor divided by 100, kg-min/hr-m^3.

0.0186 = English units material balance factor divided by 100, lb-min/hr-ft^3.

Q_{RE} = fluid catalytic cracking unit catalyst regenerator exhaust gas flow rate before entering the emission control system, as determined by Method 2, dscm/min (dscf/min).

$\%CO_2$ = percent carbon dioxide by volume, dry basis, as determined by Method 3.

$\%CO$ = percent carbon monoxide by volume dry basis, as determined by Method 3.

$\%O_2$ = percent oxygen by volume, dry basis, as determined by Method 3.

2.088 = metric units material balance factor divided by 100, kg-min/hr-m^3.

0.1303 = English units material balance factor divided by 100, lb-min/hr-ft^3

Q_{RA} = air rate to fluid catalytic cracking unit catalyst regenerator, as determined from fluid catalytic cracking unit control room instrumentation, dscm/min (dscf/min).

0.0994 = metric units material balance factor divided by 100, kg-min/hr-m^3.

0.0062 = English units material balance factor divided by 100, lb-min/hr-ft^3.

APPENDIX B TO REGULATION 7.13

Equation to Determine Particulate Emissions

$$RE = (60 \times 10^{-6})\ Q_{RV}C_s \text{ (metric units)}$$

or

$$RE = (8.57 \times 10^{-3})\ Q_{RV}C_s \text{ (English units)}$$

or

RE = particulate emission rate, kg/hr (lb/hr)

Where:

60×10^{-6} = metric units conversion factor, min-kg/hr-mg.

8.57×10^{-3} = English units conversion factor, min-lb/hr-gr.

Q_{RV} = volumetric flow rate of gases discharged into the atmosphere from the fluid catalytic cracking unit catalyst regenerator following the emission control system, as determined by Method 2, dscm/min (dscf/min).

C_s = particulate emission concentration discharged into the atmosphere, as determined by Method 5, mg/dscm (gr/dscf).

APPENDIX C TO REGULATION 7.13

Equation to Determine Emissions (expressed in kg/1000 kg of coke burn-off) in the catalyst regenerator

$$R_s = 1000 \frac{Re}{Rc} \quad \text{(metric or English units)}$$

Where:

R_s = particulate emission rate, kg/1000 kg (lb/1000 lb) of coke burn-off in the fluid catalytic cracking unit catalyst regenerator.

1000 = conversion factor, kg to 1000 kg (lb to 1000 lb).

Re = particulate emission rate, kg/hr (lb/hr).

Rc = coke burn-off rate, kg/hr (lb/hr).

APPENDIX D TO REGULATION 7.13

Equation for particulate emissions of auxiliary heat input expressed in millions of cal/hr (English units: millions of BTU/hr)

$$R_s = 1.0 + \frac{0.18\ H}{R_c} \quad \text{(metric units)}$$

or

$$R_s = 1.0 + \frac{0.10\ H}{Rc} \quad \text{(English units)}$$

Where:

R_s = allowable particulate emission rate. lg/1000 kg (lb/1000 lb)

1.0 = emission standard, 1.0 kg/1000 kg (1.0 lb/1000 lb) of coke burn-off in the fluid catalytic cracking unit catalyst regenerator.

0.18 = metric units maximum allowable incremental rate of particulate emissions, g/million cal.

0.10 = English units maximum allowable incremental rate of particulate emissions, lb/million BTU.

H = heat input from solid or liquid fossil fuel, million cal/hr (million BTU/hr).

R_c = coke burn-off rate, kg/hr (lb/hr).

APPENDIX E TO REGULATION 7.13

Equation for time weighted average of SO_2 concentration

$$C_R = \sum_{i=1}^{N} C_{Si} \frac{t_{Si}}{T}$$

Where:

C_R = SO_2 concentration for the run.

N = Number of samples.

C_{Si} = SO_2 concentration for sample i.

t_{Si} = Continuous sampling time of sample i.

T = Total continuous sampling time of all N samples.

APPENDIX F TO REGULATION 7.13

Equation for the time weighted average of the moisture content

$$B_{wo} = \sum_{i = 1}^{N} B_{si} \frac{t_{si}}{T}$$

Where:

B_{wo} = Proportion by volume of water vapor in the gas stream for the run.

N = Number of samples

B_{si} = Proportion by volume of water vapor in the gas stream for the sample i.

t_{si} = Continuous sampling time for sample i.

T = Total continuous sampling time of all N samples.

REGULATION 7.14. STANDARD OF PERFORMANCE FOR SELECTED NEW PETROLEUM REFINING PROCESSES AND EQUIPMENT

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility commenced on or after the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means vacuum producing systems and process unit turnarounds associated with a petroleum refinery.

(b) "Vacuum producing systems" means equipment which produces a partial vacuum in a vessel.

(c) "Process unit turnaround" means the shutting down, depressurization, and purging of a process unit or vessel.

SECTION 3. STANDARD FOR HYDROCARBONS

The owner or operator of an affected facility shall install, operate, and maintain all equipment necessary to accomplish the following:

(a) Vacuum producing systems. All gaseous hydrocarbons emitted from condensers, hot wells, vacuum pumps, and accumulators shall be collected and vented to a firebox, flare or other control device of equivalent efficiency as determined by the District.

(b) Process unit turnaround. The gaseous hydrocarbons purged from a process unit or vessel shall be vented to a firebox, flare, or other control device of equivalent efficiency as determined by the Department until the pressure in the process unit is less than five (5) psig.

SECTION 4. MONITORING AND REPORTING REQUIREMENTS

(a) The owner or operator shall:

(i) Keep a record of each process unit turnaround,

(ii) Record the approximate hydrocarbon concentration when the hydrocarbons were first discharged to the atmosphere, and

(iii) Record the approximate total quantity of hydrocarbons emitted to the atmosphere.

(b) The owner or operator shall retain these records for at least two years and submit them to the District upon request.

REGULATION 7.15. STANDARD OF PERFORMANCE FOR GASOLINE TRANSFER TO NEW SERVICE STATION STORAGE TANKS (STAGE 1 VAPOR RECOVERY)

SECTION 1. APPLICABILITY

The provisions of this section shall apply to the transfer of volatile organic compounds from transport vehicle tanks into storage tanks at new service stations constructed after the effective date of this regulation.

SECTION 2. DEFINITIONS

(a) "Affected facility" means the gasoline storage tanks at a service station.

(b) "Service station" means any public or private establishment which dispenses gasoline into vehicle fuel tanks.

(c) "Vapor balance system" means a system which transfers vapors from storage tanks during filling operations to the storage compartment of the transport vehicle delivering fuel.

(d) "Vent line restriction" means:

(i) an orifice of one-half to three-quarter inch inside diameter in the vent line, or

(ii) a pressure-vacuum relief valve which opens at eight ounces per square inch pressure and at 4 ounces per square inch vacuum or

(iii) a vent shut-off valve which is activated by connection of the vapor return hose.

(e) "Interlock system" means devices which either prevent fuel delivery or keep the storage tank sealed unless the vapor return hose is connected.

(f) Terms used in this section not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 3. STANDARD FOR GASOLINE TRANSFER

(a) The owner or operator of an affected facility shall install, maintain and operate the following devices on the storage tanks:

(i) Submerged fill pipe.

(ii) Gauge-well drop tube, which extends within six inches of the bottom of the tank.

(iii) Vent line restriction(s) on the affected facility.

(iv) Vapor balance system with an interlock system and vapor tight connections on the liquid fill and vapor return hoses. The cross-sectional area of the vapor return hose must be at least 50 percent of the liquid fill hose, and free of flow restrictions to achieve acceptable recovery. The type, size and design of the vapor balance system are subject to the approval of the District.

(b) The owner or operator may elect to use an alternate control system provided it can be demonstrated to the District's satisfaction to achieve an equivalent control efficiency.

(c) The owner or operator shall not allow delivery of fuel to the storage tanks until the vapor balance system is properly connected to the transport vehicle and the affected facility.

SECTION 4. STANDARD FOR TRANSPORT VEHICLE TANKS

No owner or operator of a transport vehicle shall make delivery of gasoline unless the tarnsport vehicle's tank has been leak checked at the loading terminal per Regulation 7.21. A leak test acceptable to the District and performed within the last 6 months, may be substituted for the preceding requirement. A suitable record of the leak tests or checks shall be maintained and kept in the vehicle's cab for inspection by District personnel at any time.

SECTION 5. COMPLIANCE

Equipment at new service stations shall be in compliance with this regulation at startup and this will be verified by inspections performed by District personnel.

REGULATION 7.16. STANDARD OF PERFORMANCE FOR NEW LARGE APPLIANCE SURFACE COATING OPERATIONS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each new affected facility commenced on or after the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means a coating line for large appliances including but not limited to: doors, cases, lids, panels and washers, dryers, ranges, refrigerators, freezers, water heaters, dish washers, trash compactors, and air conditioners.

(b) "Applicator" means the mechanism or device used to apply the coating, including but not limited to dipping or spraying.

(c) "Flash off area" means the space between the applicator and the oven.

(d) "Prime coat" means the first film of coating applied in a multi-coat operation.

(e) "Topcoat" means the final film of coating applied in a two-coat operation or the coatings which are applied after the prime coat in a multi-coat operation.

(f) "Single coat" means a single film coating applied directly to the metal substance omitting the prime coat.

(g) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat or single coatings containing volatile organic compounds. This shall include, but is not limited to:

(i) mixing operations;

(ii) process storage;

(iii) applicators;

(iv) drying operations including flash off area evaportation, oven drying, baking, curing, and polymerization;

(v) clean up operation;

(vi) leaks, spills and disposal of volatile organic compounds;

(vii) processing and handling of recovered volatile organic compounds.

(viii) For the purposes of determining compliance with this regulation, if any equipment or operation can be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line.

(ix) If any portion of the series of equipment and/or operations qualify for an exemption according to section 5 of this regulation, then that portion shall be considered to be a separate coating line.

(h) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than 0.1 mm of Hg at conditions of 20 degree Celsius and 760 mm of Hg.

(i) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds or recovered volatile organic compounds, but does not mean storage tanks which are subject to Regulation 7.12.

(j) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design or equipment is such as to permit more than one interpretation of this definition, theinterpretation that results in the minimum value for allowable emission shall apply.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

No person shall cause, allow or permit an affected facility to discharge into the atmosphere more than 15 percent by weight of the volatile organic compounds into the affected facility.

SECTION 4. COMPLIANCE

(a) In all cases the design of any control device is subject to approval by the District.

(b) Compliance with the standard in section 3 shall be demonstrated by a material balance except in those cases which the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined by the District based upon an engineering analysis of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system.

If requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control system or any part of the system.

(c) With the prior approval of the District, the owner or operator of a new affected facility may elect to qualify for an exemption under section 5 of this regulation, instead of meeting section 3 requirements.

(d) Whenever deemed necessary, the District shall obtain samples of the coatings to be used at a new affected facility to verify that the coatings meet the requirements in section 6 of this regulation. The following methods of analysis for coating shall be used as applicable except in those cases where the District determines that other methods are more appropriate.

(i) ASTM D 1644-59 Method A,

(ii) ASTM D 1475-60,

(iii) ASTM D 2369-73, or

(iv) Federal Standard 141 a, Method 4082.1.

(e) The new affected facility shall comply with the requirements of this regulation on start-up.

SECTION 5. EXEMPTIONS

(a) Any affected facility shall be exempt from the provisions of section 3 of this regulation if the volatile organic compound content of the coating is less than 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the applicators associated with the prime, single or topcoat coating line.

(b) Repair coating operations for the purpose of repairing scratches and nicks that occur during assembly shall be exempt from the provision of section 3 of this regulation.

REGULATION 7.17. STANDARD OF PERFORMANCE FOR NEW AUTOMOBILE AND LIGHT DUTY TRUCK SURFACE COATING OPERATIONS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility commenced on or after the effective date of the regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means a coating line for automobile and light duty truck frames, small parts, wheels, and main body parts at an assembly plant, except any exemptions in section 6(d) of this regulation.

(b) "Applicator" means the mechanism or device used to apply the coating, including, but not limited to dipping and spraying.

(c) "Automobile" means all passenger cars or passenger car derivatives capable of seating 12 or fewer passengers.

(d) "Coating line" means one or more apparatus and/or operations comprised of all applicators, flash-off areas, and ovens wherein a surface coating containing volatile organic compounds is applied, dried, or cured. This shall include, but is not limited to:

(i) mixing operations;

(ii) process storage;

(iii) applicators;

(iv) drying operations including but not limited to flash off area evaporation, oven drying, baking, curing, and polymerization;

(v) clean up operations;

(vi) leaks, spills and disposal of volatile organic compounds;

(vii) processing and handling of recovered volatile organic compounds.

(viii) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line.

(ix) If any portion of the series of equipment and/or operations qualify for an exemption according to section 5, then that portion shall be considered to be a separate coating line.

(e) "Final repair coating line" means the repainting of any coatings which are damaged during vehile assembly.

(f) "Flashoff area" means the space between the application area and the oven.

(g) "Light-duty truck" means any motor vehicle rated at 3864 kilograms (8500 pounds) gross vehicle weight or less which are designated primarily for purposes of transportation of property or are derivatives of such vehicles. (Including, but not limited to, pickups, vans, and window vans.)

(h) "Prime coat coating line" means a coating line which is responsible for protecting the surface from corrosion and providing for good adhesion of the topcoat.

(i) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds or recovered volatile organic compounds, but does not mean storage tanks which are subject to Regulation 7.12.

(j) "Topcoat coating line" means a coating line for the coating of the surface to obtain desired aesthetic effects.

(k) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than 0.1 mm of Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(l) "Surfacer" means the spray application of prime to touch-up areas on the surface not adequately covered during electrodeposition.

(m) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

(n) "Electrophoretic deposition" means a process of applying a coating by dipping the component in a coating bath with an electrical potential difference between the component and the bath.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

No person shall cause, allow or permit an affected facility to discharge into the atmosphere more than 15 percent by weight of the volatile organic compounds input into the affected facility.

SECTION 4. COMPLIANCE

(a) In all cases the design for any control device is subject to approval by the District.

(b) Compliance with the standard in section 3 shall be demonstrated by a material balance except in those cases which the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of the system. If requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control system or any part of the system.

(c) With the prior approval of the District, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under section 5.

(d) Whenever deemed necessary by the District, the District shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in section 5 of this regulation. The following methods of analysis forcoatings shall be used as applicable except in those cases where the District determines that other methods would be more appropriate.

(i) ASTM D 1644-75 Method A;

(ii) ASTM D 1475-60(74);

(iii) ASTM D 2369-73; or

(iv) Federal Standard 141a, Method 4082.1.

SECTION 5. EXEMPTIONS

(a) Any affected facility shall be exempt from the provisions of section 3 of this regulation if the volatile organic compound content of the coating as delivered to the applicator(s) is:

(i) Prime coating line: 1.2 pounds per gallon of coating, excluding water, which shall be applied by electrophoretic deposition.

(ii) Surfacers: 2.8 pounds per gallon of coating, excluding water, or 55 percent solids by volume, as applied, for volatile organic compounds reduced coating spray applied with a minimum 65% transfer efficiency.

(iii) Topcoat coating line: 2.8 pounds per gallon of coating as applied excluding water, or 50% solids by volume for volatile organic compounds reduced coating applied with a minimum of 65% transfer efficiency.

(iv) Repair coating line: 4.8 pounds per gallon of coating as applied, excluding water, applied with a minimum of 65% transfer efficiency.

(b) Any affected facility using this section of this regulation may elect to use an arithmetic average of the coatings used in the particular coating line involved. If such average meets the exemption then all the coatings will be considered to meet the exemption.

(c) The exemptions specified in this section may be achieved by:

(i) use of a low solvent coating, and/or

(ii) any other emission reduction process or equipment shown to be as effective.

(d) Certain coatings operations which are exempted from this regulation are:

(i) underbottom - sound deadener coatings

(ii) zinc rich anti-rust and weld line anti-rust prime coatings

(iii) adhesive coatings or mastics

(iv) flexible coatings

(v) plastic body fillers or caulks

(vi) interior coatings which are applied after upholstery and interior plastic parts are attached to the body.

REGULATION 7.18. STANDARD OF PERFORMANCE FOR NEW SOLVENT METAL CLEANING EQUIPMENT

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each new affected facility which commences operation after the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means cold cleaners, open vapor degreasers, and conveyorized degreasers which utilize volatile organic compounds to remove soluble impurities from metal surfaces.

(b) "Volatile organic compounds" means chemical compounds of carbon excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate which have a vapor pressure greater than 0.1 mm of Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(c) "Freeboard height" means, for a cold cleaner, the distance from the liquid solvent level in the degreaser tank to the lip of the tank. For a vapor solvent, it is the distance from the solvent vapor level in the tank to the lip of the tank.

(d) "Freeboard ratio" means the freeboard height divided by the width of the degreaser.

(e) "Refrigerated chiller" means a second set of freeboard condenser coils which create a cold air blanket above the vapor zone and are located slightly above the primary condenser coils.

(f) "Cold cleaner" means a batch-loaded degreaser whose solvent is kept below its boiling point.

(g) "Open top vapor degreaser" means a batch loaded degreaser whose solvent is heated to its boiling point creating a solvent vapor zone.

(h) "Conveyorized degreasers" means a degreaser which is continuously loaded by means of a conveyor system. Its solvent may be boiling or non-boiling.

(i) "Solvent means, in this regulation, volatile organic compounds.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

The owner or operator of an affected facility to which this regulation applies shall install, maintain and operate the control equipment and observe at all times the operating requirements which apply to his type of degreaser as specified in sections 4, 5, and 6 of this regulation.

SECTION 4. COLD CLEANERS

(a) Control Equipment

(i) The cleaner shall be equipped with a cover. If the volatile organic compound volatility is greater than 15 mm of Hg measured at 100°F or if the volatile organic compound is agitated or heated, then the cover shall be designed so that it can be easily operated with one hand.

(ii) The cleaner shall be equipped with a drainage facility such that volatile organic compound that drains off parts removed from the cleaner will return to the cleaner. If the volatile organic compound volatility is greater than 32 mm of Hg measured at 100°F then the drainage facility shall be internal so that parts are enclosed under the cover while draining. The drainage facility may be external if the District determines that an internal type cannot fit into the cleaning system.

(iii) A permanent, conspicuous lable, summarizing the operating requirements specified in paragraph (b) of this section shall be installed on or near the cleaner.

(iv) If used, the volatile organic compound spray shall be a fluid stream (not a fine, atomized or shower type spray) and at a pressure which does not cause excessive splashing.

(v) If volatile organic compound volatility is greater than 32 mm of Hg measured at 100°F or if the volatile organic compound is heated above 120°F, then one of the following control devices shall be used:

a. Freeboard that gives a freeboard ratio greater than or equal to 0.7.

b. Water cover (volatile organic compound must be insoluble in and heavier than water).

c. Other systems of equivalent control, such as a refrigerated chiller or carbon adsorption.

(b) Operating Requirements

(i) Do not dispose of waste volatile organic compound or transfer it to another party such that greater than 20 percent by weight of the waste volatile organic compound can evaporate into the atmosphere. Store waste volatile organic compound only in covered containers.

(ii) Close degreaser cover whenever not handling parts in the cleaner.

(iii) Drain cleaned parts until dripping ceases (15 seconds is usually necessary).

SECTION 5. OPEN TOP VAPOR DEGREASERS

(a) Control Equipment

(i) The degreaser shall be equipped with a cover that can be opened and closed easily wihtout disturbing the vapor zone.

(ii) The degreaser shall be equipped with the following safety switches.

a. Condenser flow switch and thermostat to shut off pump heat if condenser coolant either is not circulating or is too warm.

b. Spray safety switch to shut off spray pump if the vapor level drops more than 4 inches below the bottom condenser coil in order to prevent spraying above the vapor level.

c. Vapor level control thermostat which shuts off pump heat if the vapor zone rises above the design level.

d. Equivalent safety systems as approved by the District on a case-by-case basis.

(iii) The degreaser shall be equipped with at least one of the following major control devices:

a. Freeboard ratio greater than or equal to 0.75, and if the degreaser opening is greater than 10 square feet, the cover shall be powered or mechanically assisted.

b. Refrigerated chiller.

c. Enclosed design such that the cover or door opens only when the dry part is actually entering or exiting the degreaser.

d. Carbon adsorption system, with ventilation greater than or equal to 50 cfm/square foot of air/vapor interface area (when cover is open), and exhausting less than 25 ppm by volume volatile organic compound averaged over one complete adsorption cycle.

e. Control system demonstrated to the District's satisfaction to have control efficiency equivalent to or better than any of the above.

(iv) A permanent, conspicuous label, summarizing the operating procedures specified in paragraph (b) of this section shall be installed on or near the degreaser.

(b) Operating Requirements

(i) Keep the cover closed at all times except when processing work loads through the degreaser.

(ii) Minimize volatile organic compound carry-out by the following measures:

a. Rack parts so that entrainment of volatile organic compound is avoided and full drainage is accomplished.

b. Move parts in and out of the degreaser at less than 11 ft/min.

c. Degrease the work load in the vapor zone until condensation ceases (30 seconds or more is usually necessary).

d. Tip out any pools of volatile organic compound on the cleaned part before removal.

e. Allow parts to dry within the degreaser above the vapor zone until visually dry (15 seconds is usually necessary).

(iii) Do not degrease porous or absorbent materials such as cloth, leather, wood, or rope.

(iv) Work load should not occupy more than half of the degreaser's open top area.

(v) The vapor level should not drop more than 4 inches when the work load enters or leaves the vapor zone.

(vi) Never spray above the vapor level.

(vii) Repair volatile organic compound leaks immediately or shut-down the degreaser.

(viii) Do not dispose of waste volatile organic compound or transfer it to another party such that greater than 20 percent by weight of the waste volatile organic compound can evaporate into the atmosphere. Store waste volatile organic compound only in closed containers.

(ix) Exhaust ventilation should not exceed 65 cfm per square foot of degreaser area unless necessary to meet OSHA requirements or control device requirements. Ventilation fans should not be used near the degreaser opening.

(x) Water should not be visually detectable in the volatile organic compound exiting the water separator.

SECTION 6. CONVEYORIZED DEGREASERS

(a) Control Equipment

(i) A conveyorized degreaser shall be enclosed (such that in-plant air movement does not impinge upon the internal atmosphere of the degreaser) except for work load entrances and exits.

(ii) The degreaser shall be equipped with a drying tunnel or another means such as rotating baskets sufficient to prevent cleaned parts from carrying out volatile organic compound liquid or vapor.

(iii) Minimized openings: entrances and exits shall silhouette work loads so that the average clearance between the largest parts and the edge of the degreaser opening is either less than 4 inches or less than 10 percent of the width of the opening.

(iv) Down-time covers: The degreaser shall be equipped with covers for closing off the entrance and exit during shutdown hours.

(v) If the degreaser has an air/volatile organic compound interface area or an air/vapor interface area equal to or greater than 20 square feet, it shall be equipped with at least one of the following major control devices:

a. Refrigerated chiller.

b. Carbon adsorption system with ventilation greater than or equal to 50 cfm/square foot of air/vapor interface area (when downtime covers are open) and exhausting less than 25 ppm of volatile organic compound by volume averaged overa complete adsorption cycle.

c. A system demonstrated to the District's satisfaction to have a control efficiency equivalent to or better than either of the above.

(vi) If the degreaser is a vapor type, it shall be equipped with the following safety switches:

a. Condensor flow switch and thermostat which will shut off the sump heat if coolant is either not circulating or is too warm.

b. Spray safety switch which will shut off the spray pump or conveyor if the vapor level drops more than 4 inches below the bottom condenser coil in order to prevent spraying above the vapor level.

c. Vapor level control thermostat which will shut off sump heat if the vapor level rises above the design level.

d. Equivalent safety systems as approved by the District on a case-by-case basis.

(vii) A permanent, conspicuous label, summarizing the operating requirements specified in paragraph (b) of this section shall be installed on or near the cleaner.

(b) Operating Requirements

(i) Exhaust ventilation should not exceed 65 cfm per square foot of degreaser opening unless necessary to meet OSHA requirements or control device requirements. Work place fans should not be used near the degreaser opening.

(ii) Minimize volatile organic compound carryout by the following measures:

a. Rack parts so that entrainment of volatile organic compound is avoided and full drainage is accomplished.

b. Maintain vertical conveyor speed at less than 11 ft/min.

(iii) Do not dispose of waste volatile organic compound or transfer it to another party such that greater than 20 percent by weight of the waste volatile organic compound can evaporate into the atmosphere. Store waste volatile organic compound only in closed containers.

(iv) Repair volatile organic compound leaks immediately or shutdown the degreaser.

(v) Water should not be visually detectable in the volatile organic compound exiting the water separator.

(vi) Down-time covers shall be placed over entrances and exits of the degreaser immediately after the conveyor and exhaust are shutdown and removed just before they are started up.

SECTION 7. COMPLIANCE TIMETABLE

The new affected facility shall comply with the requirements of the regulation on start-up.

REGULATION 7.19. STANDARD OF PERFORMANCE FOR NEW METAL FURNITURE SURFACE COATING OPERATION

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each new affected facility commenced on or after the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means a coating line for indoor and/or outdoor metal furniture.

(b) "Applicator" means the mechanism or device used to apply the coating, including but not limited to; dipping, spraying, or flow-coating.

(c) "Flash off area" means the space between the applicator and the oven.

(d) "Prime coat" means the first film of coating applied in a multi-coat operation.

(e) "Topcoat" means the final film of coatings applied in a two-coat operation or the coatings which are applied after the single coat in a multi-coat operation.

(f) "Single coat" means a single film coating applied directly to the metal substrate omitting the prime coat.

(g) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat or single coating containing volatile organic compounds. This shall include, but is not limited to:

(i) mixing operations;

(ii) process storage;

(iii) applicators;

(iv) drying operations including flash off area evaporation, oven drying, baking, curing, and polymerization;

(v) clean up operations;

(vi) leaks, spills and disposal of volatile organic compounds;

(vii) processing and handling of recovered volatile organic compounds.

(viii) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line.

(ix) If any portion of the series of equipment and/or operations qualify for an exemption according to section 6 of this regulation, then that portion shall be considered to be separate coating line.

(h) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than 0.1 mm of Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(i) "Process storage" means mixing tanks, holding and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds or recovered volatile oranic compounds, but does not mean storage tanks which are subject to Regulation 7.12.

(j) "Metal furniture" means household and business items including but not limited to tables, chairs, waste baskets, beds, desks, lockers, benches, shelving, file cabinets, lamps and room dividers.

(k) "Volatile organic compounds net input"means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere.

Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than 15 percent by weight of the volatile organic compounds input into the affected facility.

SECTION 4. COMPLIANCE

(a) In all cases the design of any control device is subject to approval by the District.

(b) Compliance with the standard in section 3 of this regulation shall be demonstrated by a material balance except in those cases which the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system.

If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control system or any part of the system.

(c) With the prior approval of the District, the owner or operator of a new affected facility may elect to qualify for an exemption under section 6 of this regulation, instead of meeting the requirements of section 3.

(d) Whenever deemed necessary by the District, the District shall obtain samples of the coatings to be used at a new affected facility to verify that the coatings meet the requirements in section 6 of this regulation. The following methods of analysis for coatings shall be used as applicable except in those cases where the District determines that other methods are more appropriate:

(i) ASTM D 1644-59 Method A,

(ii) ASTM D 1475-60,

(iii) ASTM D 2369-73, or

(iv) Federal Standard 141 a, Method 4082.1.

SECTION 5. COMPLIANCE

The new affected facility shall comply with the requirements of this regulation on startup.

SECTION 6. EXEMPTIONS

Any affected facility shall be exempt from the provisions of section 3 of this regulation if the volatile organic compound content of the coating is less than 0.36 kilograms per liter of coating (3.0 pounds per gallon), excluding water, delivered to the applicators associated with the prime, single or topcoat coating line.

REGULATION 7.20. STANDARD OF PERFORMANCE FOR NEW GASOLINE LOADING FACILITIES AT BULK PLANTS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each new affected facility which is commenced after the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Affected facility" means a bulk gasoline plant

(b) "Bulk gasoline palnt" means a facility for the storage and dispensing of gasoline that employs tank trucks, trailers, or other mobile non-marine vessels for both incoming and outgoing gasoline transfer operations.

(c) "Gasoline" means any petroleum distillate having a Reid vapor pressure of 4.0 pounds per square inch or greater used as a fuel for internal combustion engines.

(d) "Bottom fill system" means a system of filling transport vehicle tanks through an opening that is flush with the bottom of the transport vehicle tank.

(e) "Vapor balance system" means a combination of pipes or hoses which create a closed system between the vapor spaces of an unloading tank and a received tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded.

(f) "Submerged fill tube system" means a fill tube the discharge of which is entirely submerged when the liquid level is 6 inches above the bottom of the transport vehicle tank.

(g) "Transport vehicle" means tank trucks, trailers, railroad tank cars, or barges.

SECTION 3. STANDARD FOR HYDROCARBONS

(a) The owner of operator of an affected facility shall install, maintain, and operate:

(i) Stationary storage tank control devices according to the provisions of regulation 7.12.

(ii) A vapor balance system for:

a. filling of stationary storage tanks from transport vehicle tanks and

b. filling of transport vehicle tanks from stationary storage tanks

(iii) For loading into transport vehicle tanks either:

a. a submerged fill tube system or

b. a bottom fill system

(b) The vapor balance system shall be equipped with fittings which are vapor tight and will automatically close upon disconnection so as to prevent the release of organic material.

(c) The cross-sectional area of the vapor return hose must be at least 50 percent of the cross-sectional area of the liquid fill line and free of flow restrictions.

(d) The vapor balance system must be equipped with interlocking devices which prevent transfer of gasoline until the vapor return hose is connected.

(e) Transport vehicle tank hatches shall be closed at all times during loading operations.

(f) There shall be no leaks from the pressure/vacuum relief valves and hatch covers of the stationary storage tanks or transport vehicle tanks during loading.

(g) The pressure relief valves on storage vessels and tank trucks or trailers shall be set to release at no less than 0.7 psig unless a lower setting is required by applicable fire codes.

(h) The owner or operator shall not load gasoline into any transport vehicle or receive gasoline from any transport vehicle which does not have proper fittings for connection of the vapor balance system, nor shall the owner or operator load or receive gasoline unless the vapor balance system is properly connected and in good working order. Except as provided in paragraph (i) of this section, the fittings on the transport vehicle tanks must be vapor tight and automatically close upon disconnection so as to prevent the release of organic material.

(i) The following shall apply to the loading of a transport vehicle tank by means of a submerged fill tube system:

  (i) When inserted into the tank, the submerged fill tube system must form a vapor tight seal with the tank.

  (ii) Tank hatches are to be opened for the minimum time necessary to insert or remove the submerged fill tube system.

(j) No owner or operator shall permit gasoline to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.

SECTION 4.

The owner or operator may elect to use an alternate control system if it can be demonstrated to the District's satisfaction that the alternate system will achieve equivalent control efficiency.

SECTION 5. COMPLIANCE

The new affected facility shall comply with the requirements of this regulation on startup.

REGULATION 7.21. STANDARD OF PERFORMANCE FOR NEW GASOLINE LOADING FACILITIES AT BULK TERMINALS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each facility which means loading facilities commencing after the effective date of this regulation.

SECTION 2. DEFINITIONS

(a) "Affected facility" means the facilities at a bulk gasoline terminal for loading gasoline into tank trucks, trailers, railroad tank cars or other mobile, non-marine vessels.

(b) "Bulk gasoline terminals" means a facility for the storage and dispensing of gasoline where incoming gasoline loads are received by pipeline, marine tanks or barge (solely or in combination with tank trucks, trailers, railroad tank cars, or other mobile, non-marine vessels) and where outgoing gasoline loads are transferred by tank trucks, trailers, railroad tank cars, or other mobile non-marine vessels.

(c) "Gasoline" means any petroleum distillate used as a fuel for internal combustion engines and having a Reid vapor pressure of 4.0 pounds per square inch or greater.

SECTION 3. STANDARD OF HYDROCARBONS

(a) No owner or operator of any loading facility shall load gasoline unless such facility is equipped with a vapor control system which is in good working order and in operation.

(b) Loading shall be accomplished in such a manner that all displaced vapor and air will be vented only to the vapor collection system. Measures shall be taken to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected.

(c) No owner or operator shall permit the hydrocarbon emissions from the vapor control device to exceed 80 milligrams per liter of gasoline loaded.

(d) No owner or operator shall open tank hatches or allow hatches to be opened at any time during loading operations if bottom-fill is practiced. If top-submerged fill is practiced, the hatch is to be opened the minimum time necessary to install and remove the submerged fill pipe and associated vapor collection equipment.

(e) No owner or operator shall permit there to be any leak in the railroad cars, barges, trailers, tank trucks, pressure relief valves, or associated vapor collection. A leak is defined as a reading of 10 percent of the lower explosive limit as propane on the portable hydrocarbon detector (explosimeter) with the probe 1 centimeter from the source.

(f) No owner or operator shall permit petroleum liquids to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaportation.

SECTION 4. MONITORING AND REPORTING REQUIREMENTS

The owner or operator shall conduct such monitoring of operations and submit records as specified by the District.

SECTION 5. COMPLIANCE

(a) The design of the vapor control system is subject to the approval of the District.

(b) Method(s) specified by the District shall be used to determine compliance with the standard in section 3 of this regulation.

(c) The new affected facility shall comply with the requirements of this regulation on start-up.

REGULATION 7.23. STANDARD OF PERFORMANCE FOR NEW DRY CLEANING FACILITIES

SECTION 1. APPLICABILITY

The provisions of this section shall apply to each dry cleaning system which commences operation on or after the effective date of these regulations.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Fluorocarbon" means any of the family of saturated or partially saturated carbon compounds containing fluorine.

(b) "Petroleum solvent" means any carbon compound used for cleaning clothes.

(c) "Dry cleaning system" means all equipment from the cleaning wheel up to and including final drying. All associated equipment or operations such as sniffers, muck cookers, transfer operations are included for purposes of determining compliance with this regulation.

SECTION 3. STANDARD FOR SOLVENT VAPORS

(a) For fluorocarbon and perchloroethylene plants emissions shall not exceed 5 kilograms of solvent vapor per 100 kilograms of materials cleaned.

(b) For petroleum solvent plants emissions shall not exceed 15 kilograms of solvent vapor per 100 kilograms of material cleaned.

SECTION 4. LABELING OF EQUIPMENT

All dry cleaning equipment subject to this regulation shall have an easily readable label in a conspicuous place which details proper operating instructions.

SECTION 5. COMPLIANCE

The new affected facility shall comply with the requirements of this regulation on start-up.

REGULATION 7.24. STANDARD OF PERFORMANCE FOR NEW GENERAL SURFACE COATING OPERATIONS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility commenced after the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given to them in Regulation 1.02.

(a) "Affected facility" means a coating line which has an input of more than 2000 pounds of volatile organic compounds per year which is not subject to any other standard of performance with respect to volatile organic compounds under these regulations.

(b) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than 0.1 mm of Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(c) "Coating line" means a series of equipment and/or operations used to apply surface coatings containing volatile organic compounds. This shall include, but is not limited to:

(i) mixing operations;

(ii) process storage;

(iii) applicators such as spray booths, dip tanks, printers and roller coaters;

(iv) drying operations including, but not limited to, flash off evaporation, oven drying, baking, curing, and polymerization;

(v) clean up operations;

(vi) leaks, spills and disposal of volatile organic compounds;

(vii) processing and handling of recovered volatile organic compounds.

(viii) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall, be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line.

(ix) If any portion of the series of equipment and/or operations qualify for an exemption according to section 5 of this regulation, then that portion shall be considered to be a separate coating line.

(d) "Surface coating" includes, but is not limited to, the following materials: paints of all types, primers; printing inks; adhesives; solvents; cements; lubricants; weatherproof coatings; varnishes; coating thinners; natural or synthetic rubbers; fabric and textile coatings; and paper coatings.

(e) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to Regulation 7.12.

(f) "High-solids coating" means a coating with a volatile content of not more than 45 percent by volume of the coating as applied.

(g) "Water-borne coating" means a coating with its volatile content consisting of water and volatile organic compounds, the volatile organic compounds comprising not more than 20 percent by volume of the volatile content as applied.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than 15 percent by weight of the volatile organic compounds input into the affected facility.

SECTION 4. COMPLIANCE

(a) In all cases the design of any control system is subject to approval by the District.

(b) Compliance with the standard in section 3 of this regulation shall be demonstrated by a material balance except in those cases where the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control device.

(c) With the prior approval of the District, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under section 5 of this regulation.

(d) Whenever deemed necessary, the District shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in section 5 of this regulation. The following methods of analyses for coatings shall be used as applicable except in those cases where the District determines that other methods would be morc appropriate:

(i) ASTM D 1644-59 Method A,

(ii) ASTM D 1475-60,

(iii) ASTM D 2369-73, or

(iv) Federal Standard 141 a, Method 4082.1.

SECTION. 5. EXEMPTIONS

Any affected facility which utilizes only high-solid coatings and/or water-borne coatings shall be exempt from the provisions of section 3 of this regulation.

REGULATION 7.25. STANDARD OF PERFORMANCE FOR NEW SOURCES USING VOLATILE ORGANIC COMPOUNDS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility not elsewhere regulated and which commences afer the effective date of this regulation.

(a) Those portions of any series of affected facilities designed for processing a continuous web, strip, or wire which emit volatile organic compounds shall be taken collectively to determine compliance with this regulation.

(b) Emissions of volatile organic compounds resulting from air or heated drying of products for the first 12 hours after their removal from an affected facility shall be included in determing compliance with this regulation.

(c) Emissions of volatile organic compounds to the atmosphere from the cleanup with volatile organic compounds of any affected facility shall be included with other emission of volatile organic compounds from that affected facility for determining compliance with this regulation.

(d) The provisions of this section shall not apply to the spraying or other use of insecticides, pesticides or herbicides.

SECTION 2. DEFINITIONS

(a) "Affected facility" means any equipment, machine, and other device which uses volatile organic compounds and which has the potential to emit greater than 5 tons of volatile organic compounds per year.

(b) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than 0.1 mm of Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(c) "Potential emissions" means the emissions that will result if the equipment, machine, or other device is operated 8,760 hours per year unless limited by permit condition at maximum actual capacity and without any emissions controls or vapor recovery systems.

(d) "Vapor recovery system" means a vapor gathering system capable of collecting and disposing of 90% by weight of all volatile organic compounds discharged from the affected facility in such a manner as to prevent their emission to the atmosphere.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

(a) No owner or operator shall cause, allow or permit an affected facility to discharge into the atmosphere more than 15 percent by weight of the volatile organic compounds input into the affected facility.

(b) If an incineration vapor recovery system is used to achieve compliance with paragraph (a) of this section then 90 percent of the carbon in the volatile organic compounds must be oxidized to carbon dioxide.

(c) The owner or operator may obtain an exemption by means of a process change which can be as effective in reducing volatile organic compounds emissions as an acceptable vapor recovery system. However, a reduction in production rate resulting in decreased emission of volatile organic compounds shall not constitute an acceptable process change unless the annual input of volatile organic compounds is sufficiently reduced so that the coating line can no longer be considered an affected facility.

SECTION 4. MONITORING AND REPORTING

(a) Any person controlling the emission of volatile organic compounds pursuant to this section shall provide, properly, install, calibrate, maintain in good working order and in operation, devices as specified in the permit to construct or the permit to operate, or as specified by the District, for indicating temperatures, pressures, rates of flow or other operating conditions necessary to determine the degree and effectiveness of air pollution control equipment.

(b) Any person using volatile organic compounds or any material containing volatile organic compounds shall supply the District, upon request and in the manner and form prescribed, written evidence of the chemical composition, physical properties, and amount consumed for each volatile organic compound used.

SECTION 5. COMPLIANCE

The new affected facility shall comply with the requirements of this regulation on startup.

REGULATION 7.26. STANDARD OF PERFORMANCE FOR NEW SANITARY LANDFILLS

SECTION 1. APPLICABILITY

The provisions of this section apply to all sanitary landfills located in Jefferson County which commenced operation after the effective date of this regulation.

SECTION 2. REGISTRATION

The owner or operator of each affected sanitary landfill shall register with the District on forms provided by the District.

SECTION 3. REPORTS

The District may require the owner or operator of a sanitary landfill to submit reports containing information relating to the nature of fill, size of operation, and the extent of any expected or actual gaseous or particulate emissions from its operation.

SECTION 4. CONTROL REQUIREMENTS

The District may require the owner or operator of any sanitary landfill to install and operate by-product gas venting and particulate control measures to the extent that public health is protected when emissions occur during and after the life of the landfill. These measures may include but are not limited to:

(a) Injections;

(b) Venting equipment;

(c) Incineration of hazardous emissions;

(d) Flow and emission control devices;

(e) Inert file applications;

(f) Dust control measures.

SECTION 5. TESTING REQUIREMENTS

The District may require the owner or operator to conduct emissions testing of vent gases for purposes of determining the nature of and relative concentrations of the components of such gases.

REGULATION 7.27. STANDARD OF PERFORMANCE FOR NEW PORTLAND CEMENT PLANTS

SECTION 1. APPLICABILITY

The provisions of the regulation shall apply to the following affected facilities in Portland cement plants commenced on or after August 17, 1971; kiln, clinker cooler, raw mill system, finish mill system, raw mill dryer, raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Portland cement plant" means any facility manufacturing Portland cement by either the wet or dry process.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any kiln any gases which:

(i) Contain particulate matter in excess of 0.15 kg per metric ton of feed (dry basis) to the kiln (0.30 lb per ton).

(ii) Exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any clinker cooler any gases which:

(i) Contain particulate matter in excess of 0.050 kg per metric ton of feed (dry basis) to the kiln (0.10 lb. per ton).

(ii) Exhibit 10 percent opacity, or greater.

(c) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility other than the kiln and clinker cooler any gases which exhibit 10 percent opacity, or greater.

SECTION 4. MONITORING OF OPERATIONS

The owner or operator of any Portland cement plant subject to the provisions of this regulation shall record the daily production rates and kiln feed rates.

SECTION 5. TEST METHODS AND PROCEDURES

(a) The reference method as defined in Regulation 1.04 shall be used to determine compliance with the standards prescribed in section 3 of this regulation.

(b) For determination of particulates, the minimum sampling time and minimum sample volume for each run (except when process variables or other factors justify otherwise to the satisfaction of the District) shall be as follows:

(i) 60 minutes and 0.85 dscm (30.0 dscf) for the kiln.

(ii) 60 minutes and 1.15 dscm (40.0 dscf) for the clinker cooler.

(c) Total kiln feed rate (except fuels), expressed in metric tons per hour on a dry basis, shall be determined during each testing period by suitable methods, and shall be confirmed by a material balance over the production system.

(d) For each run, particulate matter emissions, expressed in g/metric ton of kiln feed, shall be determined by dividing the emission rate in g/hr by the kiln feed rate. The emission rate shall be determined by the equation, g/hr = (Qs) (c), where Qs = volumetric flow rate of the total effluent in dscm/hr, and c = particulate concentration in g/dscm.

REGULATION 7.28. STANDARD OF PERFORMANCE FOR NEW NITRIC ACID PLANTS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each nitric acid production unit commenced on or after August 17, 1971, which is the affected facility.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Nitric acid production unit" means any facility producing weak nitric acid by either the pressure or atmospheric pressure process.

(b) "Weak acid production unit" means acid which is 30 to 70 percent in strength.

SECTION 3. STANDARD FOR NITROGEN OXIDES

On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which:

(a) Contain nitrogen oxides, expressed as nitrogen dioxide, in excess of 1.5 kg per metric ton of acid produced (3.0 lb per ton), the production being expressed as 100 percent nitric acid.

(b) Exhibit 10 percent opacity, or greater.

SECTION 4. EMISSION MONITORING

(a) A continuous monitoring system for the measurement of nitrogen oxides shall be installed, calibrated, maintained and operated by the owner or operator. The pollutant gas used to prepare calibration gas mixtures under paragraph 2.1, Performance Specification 2 of Appendix B of 40 CFR 60 and for calibration checks under paragraph (4) of section 6 of Regulation 7.01 shall be nitrogen dioxide. The span shall be set at 500 ppm of nitrogen dioxide. Reference Method 7 of Appendix A of 40 CFR 60 shall be used for conducting monitoring system performance evaluations under paragraph (3) of section 6 of Regulation 7.01.

(b) The owner or operator shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton). The conversion factor shall be established by measuring emissions with the continuous monitoring system concurrently with measuring emissions with the applicable reference method tests. Using only that portion of the continuous monitoring emission data that represents emission measurements concurrent with the reference method test periods, the conversion factor shall be determined by dividing the reference method test data averages by the monitoring data averages to obtain a ratio expressed in units of the applicable standard to units of the monitoring data, i.e., kg/metric ton per ppm (lb/ton per ppm). The conversion factor shall be re-established during any performance test under Regulation 7.01 or any continuous monitoring system performance evaluation under paragraph (3) of section 6 of Regulation 7.01.

(c) The owner or operator shall record the daily production rate and hours of operation.

(d) For the purpose of reports required under section 5 of Regulation 7.01, periods of excess emissions that shall be reported are defined as any three-hour period during which the average nitrogen oxides emissions (arithmetic average of three contiguous one-hour periods) as measured by a continuous monitoring system exceed the standard under section 3 of this regulation.

SECTION 5. TEST METHODS AND PROCEDURES

(a) The reference methods as defined in Regulation 1.04 shall be used to determine compliance with the standard prescribed in section 3 of this regulation.

(b) The sampling point shall be the center of cross-sectional area of the stack or duct or at a point no closer to the walls than 1 m (3.28 ft). Each run shall consist of at least 4 grab samples taken at approximately 15 minute intervals. The arithmetic mean of the samples shall constitute the run value. A velocity traverse shall be performed once per run.

(c) Acid production rate, expressed in metric tons per hour of 100 percent nitric acid, shall be determined during each testing period by suitable methods and shall be confirmed by a material balance over the production system.

(d) For each run, nitrogen oxides, expressed in g/metric ton of 100 percent nitric acid, shall be determined by dividing the emission rate in g/hr by the acid production rate. The emission rate shall be determined by the equation:

$$g/hr = (Qs)(c)$$

Where

Qs = volumetric flow rate of the effluent in dscm/hr

and

c - nitrogen oxides (NO_x) concentration in g/dscm.

REGULATION 7.29. STANDARD OF PERFORMANCE FOR NEW SULFURIC ACID PLANTS

SECTION 1. APPLICABILITY

The provisions of this section shall apply to each sulfuric acid production unit commenced on or after August 17, 1971, which is the affected facility.

SECTION 2.. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Sulfuric acid production unit" means any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides and mercaptans, or acid sludge but does not include facilities where conversion to sulfuric acid is utilized primarily as a means of preventing emissions to the atmosphere of sulfur dioxide or other sulfur compounds.

(b) "Acid mist" means sulfuric acid mist, as measured by Method 8 of Appendix A of 40 CFR 60 or an equivalent or alternate method.

SECTION 3. STANDARD FOR SULFUR DIOXIDE

On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain sulfur dioxide in excess of 2 kg per metric ton of acid produced (4 lb. per ton), the production being expressed as 100 percent sulfuric acid.

SECTION 4. STANDARD FOR ACID MIST

On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator of an affected facility shall allow to be discharged into the atmosphere from any affected facility any gases which:

(a) Contain acid mist in excess of 0.075 kg per metric ton of acid produced (0.15 lb per ton), the production being expressed as 100 percent sulfuric acid.

(b) Exhibit 10 percent opacity, or greater.

SECTION 5. EMISSION MONITORING

(a) A continuous monitoring system for the measurement of sulfur dioxide shall be installed, calibrated, maintained, and operated by the owner or operator. The pollutant gas used to prepare calibration gas mixture under paragraph 2.1, Performance Specification 2 of Appendix B to CFR 60 and for calibration checks under paragraph (3) of section 6 of Regulation 7.01 shall be sulfur dioxide. Reference Method 8 shall be used for conducting monitoring system performance evaluations under paragraph (3) of section 6 of Regulation 7.01 except that only the sulfur dioxide portion of the Method 8 results shall be used. The span shall be set at 1000 ppm of sulfur dioxide.

(b) The owner or operator shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton). The conversion factor shall be determined, as a minimum three times daily by measuring the concentration of sulfur dioxide entering the converter using suitable methods (e.g., the Reich test) and calculating the aprpriate conversion factor for each eight-hour period as follows:

$$CF = k \frac{(1.000-0.015r)}{r-s}$$

Where:

CF = conversion factor (kg/metric ton per ppm, lb/ton per ppm)

k = constant derived from material balance. For determining CF in metric units, k = 0.0653. For determining CF in English units, k = 0.1306.

r = Percentage of sulfur dioxide by volume entering the gas converter. Appropriate corrections must be made for air injection for plants subject to the District's approval.

s = percentage of sulfur dioxide by volume in the emissions to the atmosphere determined by the continuous monitoring system required under section 5(a) of this regulation.

(c) The owner or operator shall record all conversion factors and values under section 5 (b) of this regulation from which they were computed (i.e., CF, r, and s).

(d) Reserved.

(e) For the purpose of reports under paragraph (3) of section 3 of Regulation 7.01, periods of excess emissions shall be all three-hour periods (or the arithmetic average of 3 consecutive one hour periods) during which the integrated average sulfur dioxide emissions exceed the applicable standards under section 3 of this regulation.

SECTION 6. TEST METHODS AND PROCEDURES

(a) The appropriate reference methods as defined in 1.04 shall be used to determine compliance with the standards prescribed in sections 3 and 4 of this regulation as follows:

(i) Method 8 for the concentrations of sulfur dioxide and acid mist;

(ii) Method 1 for sample and velocity traverses;

(iii) Method 2 for velocity and volumetric flow rate; and

(iv) Method 3 for gas analysis.

(b) The moisture content can be considered to be zero. For determination of sulfur dioxide and acid mist the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be 1.15 dscm (40.6 dscf) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the District.

(c) Acid production rate, expressed in metric tons per hour of 100 percent sulfuric acid, shall be determined during each testing period by suitable methods and shall be confirmed by a material balance over the production system.

(d) Acid mist and sulfur dioxide emissions, expressed in g/metric ton of 100 percent sulfuric acid shall be determined by dividing the emission rate in g/hr by the acid production rate. The emission rate shall be determined by the equation:

$$g/hr = (Qs)\ (c)$$

Where:

Qs = volumetric flow rate of the effluent in dscm/hr, and

c = acid mist and sulfur dioxide concentrations in g/dscm as determined in accordance with subparagraph (a), subsection (i) of this section.

REGULATION 7.30. STANDARD OF PERFORMANCE FOR NEW SECONDARY LEAD SMELTERS

SECTION 1. APPLICABILITY

The provisions of this section shall apply to the following affected facilities in secondary lead smelters which commenced on or after June 11, 1973: pot furnaces of more than 250 kg (550 lb) charging capacity, blast (cupola) furnaces, and reverberatory furnaces.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Reverberatory furnace" includes the following types of reverberatory furnaces: stationary, rotating, rocking and tilting.

(b) "Secondary lead smelter" means any facility producing lead from a lead-bearing scrap material by smelting to the metallic form.

(c) "Lead" means elemental lead or alloys in which the predominant component is lead.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01. is completed, no owner or operator subject to the provisions of this section shall discharge or cause the discharge into the atmosphere from a blast (cupola) or reverberatory furnace any gases which:

(i) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(ii) Exhibit 20 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this section shall discharge or cause the discharge into the atmosphere from any pot furnace any gases which exhibit 10 percent opacity or greater.

SECTION 4. TEST METHODS AND PROCEDURES

(a) The reference methods as defined in Regulation 1.04, shall be used to determine compliance with the standards prescribed in section 3 of this regulation.

(b) For determining the concentration of particulate matter and associated moisture content, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.9 dscm/hr(0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the District. Particulate sampling shall be conducted during representative periods of furnace operation, including charging and and tapping.

REGULATION 7.31. STANDARDS OF PERFORMANCE FOR NEW SECONDARY BRASS AND BRONZE INGOT PRODUCTION PLANTS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to the following affected facilities, in secondary brass or bronze ingot production plants, which commenced on or after June 11, 1973: reverberatory and electric furnaces of 1,000 kg(2,205 lb) or greater production capacity and blast (cupola) furnaces of 250 kg/hr (550 lb/hr) or greater production capacity.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Brass or bronze" means any metal allow containing copper as its predominant constituent, and lesser amounts of zinc, tin, lead, or other metals.

(b) "Reverberatory furnace" includes the following types of reverberatory furnaces: stationary, rotating, rocking, and tilting.

(c) "Electric furnace" means any furnace which uses electricity to Produce over 50 percent of the heat required in the production of refined brass or bronze.

(d) "Blast furnace" means any furnace used to recover metal from slag.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from a reverberatory furnace any gases which:

(i) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(ii) Exhibit 20 percent opacity or greater.

(b) On and afer the date on which the performance test required to be conducted by Regulation 7.01 completed, no owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from any blast (cupola) or electric furnace any gases which exhibit 10 percent opacity or greater.

SECTION 4. TEST METHODS AND PROCEDURES

(a) The reference methods as defined in Regulation 1.04 shall be used to determine compliance with the standards prescribed in section 3 of this regulation.

(b) For determining the concentration of particulate matter and the associated moisture content, the sampling time for each run shall be at least 120 minutes and the sampling rate shall be at least 0.9 dscm/hr(0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the District. Particulate matter sampling shall be conducted during representative periods of charging and refining, but not during pouring of the heat.

REGULATION 7.32. STANDARD OF PERFORMANCE FOR NEW SEWAGE TREATMENT PLANTS

SECTION 1. APPLICABILITY

(a) The provisions of this regulation shall apply to each affected facility which is each incinerator, commenced on or after the classification date, which burns the sludge produced by municipal sewage treatment facilities except as provided under paragraph (b) of this section.

(b) Any sewage sludge incinerator that is in a municipal waste treatment plant having a dry sludge capacity below 140 kg/hr (300 lb/hr) is exempt from this regulation if the owner or operator can demonstrate to the District's satisfaction that it is not feasible (because of freezing conditions) to dispose of the sludge by land applucation or in a sanitary landfill.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Classification date" means June 11, 1973.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator of any sewage sludge incinerator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere of:

(i) Particulate matter at a rate in excess of 0.65 g/kg dry sludge input (1.30 lb/ton dry sludge input).

(ii) Any gases which exhibit 20 percent opacity or greater.

SECTION 4. MONITORING OF OPERATIONS

(a) The owner or operator of any sluge incincerator subject to the provisions of this regulations shall:

(i) Install, calibrate, maintain, and operate a flow measuring device which can be used to determine either the mass or volume of sludge charged to the incinerator. The flow measuring device shall have an accuracy of ±5 percent over its operating range.

(ii) Provide access to the sludge charged so that a well-mixed representative grab sample of the sludge can be obtained.

SECTION 5. TEST METHODS AND PROCEDURES

(a) The reference methods as defined in Regulation 1.04, to determine compliance with the standards prescribed in section 3 of this regulation.

(b) For determining the concentration of particulate matter and associated moisture content, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.015 dscm/min (0.53 dscf/min), except that shorted sampling times, when necessitated by process variables or other factors may be approved by the District.

(c) Dry sludge charging rate shall be determined as follows:

(i) Determine the mass (Sm) or volume (Sv) of sludge charged to the incinerator during each run using a flow measuring device meeting the requirements of subparagraph (i) of paragraph (a) of section 4 of this regulation. If total input during a run is measured by a flow measuring device, such readings shall be used. Otherwise, record the flow measuring device readings at 5 minute intervals during a run. Determine the quantity charged during each interval by averaging the flow rates at the beginning and end of the interval and then multiplying the average for each interval by the time for each interval. Then add the quantity for each interval to determine the total quantity charged during the entire run, (Sm) or

(ii) Collect samples of the sludge charged to the incinerator in non-porous collecting jars at the beginning of each run and at approximately one hour intervals thereafter until the test ends, and determine for each sample the dry sludge content (total solids residue) in accordance with the method specified by the District.

(iii) Determine the quantity of dry sludge per unit sludge charged in terms or either average quantity of dry sludge per unit volume of sludge charged to the incinerator, or average ratio of quantity of dry sludge to quantity of sludge charged to the incinerator.

(d) Particulate emission rate shall be determined by a formula specified by a formula specified by the District.

(e) Compliance with subparaph (i) of section 3 of this regulation shall be determined according to a formula specfied by the District.

REGULATION 7.33. STANDARD OF PERFORMANCE FOR NEW KRAFT PAPER MILLS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to the following affected facilities in kraft pulp mills, which are commenced on or after September 24, 1976: digester system, brown stock washer system, multiple-effect evaporator systems and black liquor oxidation system, recovery furnace smelt dissolving tank, lime kiln and condensate stripper system. In pulp mills, where kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of this regulation are applicable when any portion of the material charged to an affected facility is applicable when any portion of the material charged to an affected facility is produced by the kraft pulping operation.

SECTION 2. DEFINITIONS

Terms used in this regulation shall have the same meaning given them in Regulation 1.02.

(a) "Kraft pulp mill" means any stationary source which produces pulp from wood by cooking (digesting) wood chips in a water solution of sodium hydroxide and sodium sulfide (white liquor) at a high temperature and pressure. Regeneration of the cooking chemicals through a recovery process is part of the kraft pulp mill.

(b) "Neutral sulfite semichemical operation" means any operation in which pulp is produced from wood by cooking wood chips in a solution of sodium sulfite and sodium bicarbonate, followed by mechanical defibrating (grinding).

(c) "Total reduced sulfur (TRS)" means the sum of the sulfur compounds, hydrogen sulfide, methyl mercaptan, dimethyl sulfide and dimethyl disulfide, that are released during the kraft pulping operation.

(d) "Digester system" means each continuous digester or batch digester used for cooking wood in white liquor and associated flash tank(s), below tank(s), chip steamer(s) and condenser(s).

(e) "Brown stock washer system" means brown stock washers and associated knotters, vacuum pumps, and filtrate tanks that are used to wash the pulp following the digester system.

(f) "Multiple-effect evaporator system" means the multiple-effect evaporators and associated condenser(s) and hotwell(s) used to concentrate the spent cooking liquid that is separated from the pulp (black liquor).

(g) "Black liquor oxidation system" means the vessels used to oxidize the black liquor, and associated tank(s).

(h) "Recovery furnace" means either a straight kraft recovery furnace or a cross recovery furnace, and includes the direct-contact evaporator for a direct-contact furnace.

(i) "Straight kraft recovery furnace" means a furnace used to recover chemicals consisting primarily of sodium and sulfur compounds by burning black liquor, which, on a quarterly basis, contains 7 weight percent or less of the total pulp solids from the neutral sulfite semichemical process or has green liquor sulfidity of 28 percent or less.

(j) "Cross recovery furnace" means a furnace used to recover chemicals consisting primarily sodium and sulfur compounds by burning black liquor which, on a quarterly basis, contains more than 7 weight percent of the total pulp solids from the neutral sulfite semichemical process or has a green liquor sulfidity of more than 28 percent.

(k) "Black liquor solids" means the dry weight of solids which enter the recovery furnace in the black liquor.

(l) "Green liquor sulfidity" means the sulfidity of the liquor which leaves the smelt dissolving tank.

(m) "Smelt dissolving tank" means a vessel used for dissolving the smelt collected from the recovery furnace.

(n) "Lime kiln" means a unit used to calcine lime mud, which consists primarily of calcium carbonate, into quicklime (calcium oxide).

(o) "Condensate stripper system" means a column, and associated condensers, used to strip, with air or steam, TRS compounds from condensate streams from the various processes within a kraft pulp mill.

SECTION 3. STANDARD FOR PARTICULATE MATTER

On and after the date on which the performance test, required by regulation 1.04, is completed, no owner or operator subject to this regulation, shall cause to be discharged into the atmosphere:

(a) From a recovery furnace any gases which:

(i) Contain particulate matter in excess of 0.10 g/dscm (0.44 gr/dscf) corrected to 8 percent oxygen.

(ii) Exhibit 20 percent opacity or greater

(b) From any smelt dissolving tank, any gases which contain particulate matter in excess of 0.1 g/kg [0.2 lbs/ton] of black liquor solids (dry weight)

(c) From any lime kiln any gases which contain particulate matter in excess of:

(i) 0.15 g/dscm (0.067 gr/dscg corrected to 10 percent oxygen, when gaseous fossil fuel is burned.

(ii) 0.30 g/dscm (0.13 gr/dscf) corrected to 10 percent oxygen, when liquid fossil fuel is burned.

SECTION 4. STANDARD FOR TOTAL REDUCED SULFUR (TRS)

On and after the date on which the performance test required to be conducted regulation 7.01, is completed, no owner or operator, subject to this regulation, shall cause to be discharged into the atmosphere:

(a) From any digester system, brown stock washer system, multiple-effect evaporator system, black liquor system, or condensate stripper system, any gases which contain TRS in excess of 5 ppm by volume (dry basis), corrected to 10 percent oxygen unless the following conditions are met:

(i) The gases are combusted in a lime kiln subject to the provisions of paragraph (e) of this section or

(ii) The gases are combusted in a recovery furnace subject to the provisions of paragraph (b) and (c) of this section; or

(iii) The gases are combusted with other waste gases in an incinerator or other device, or combusted in a lime kiln or recovery furnace not subject to the provisions of this section, and are subjected to a minimum temperature of 1200°F for at least 0.5 seconds; or

(iv) It has been demonstrated to the District's satisfaction, by the owner or operator, that incinerating the exhaust gases from a new, modified or reconstructed black liquor oxidation system or brown stock washer system in an existing facility is technologically or economically not feasible. Any exempt system will become facility is changed so the gases can be incinerated.

(v) The gases from the digester system, brown stock washer system, condensate stripper system, or black liquor oxidation system are controlled by a device other than combustion. In this case, these systems shall not discharge any gases to the atmosphere which contain TRS in excess of 5 ppm by volume(dry basis),corrected to the actual content of the untreated gas stream.

(b) From any straight kraft recovery furnace any gases which contain TRS in excess of 5 ppm by volume (dry basis), corrected to 8 percent oxygen.

(c) From any cross recovery furnace, any gases which contain TRS in excess of 25 ppm by volume (dry basis), corrected to 8 percent oxygen.

(d) From any smelt dissolving tank, any gases which contain TRS in excess of 0.0084 g/kg. [0.0168 lbs/ton], black liquor solids (dry weight).

(e) From any lime kiln, any gases which contain TRS in excess of 8 ppm by volume (dry basis), corrected to 10 percent oxygen.

SECTION 5. MONITORING OF EMISSIONS AND OPERATIONS

Any owner or operator subject to the provisions to this regulation shall install, calibrate, maintain, and operate the following continuous monitoring systems and devices:

(a) A continuous monitoring system to monitor and record the opacity of the gases discharged into the atmosphere from any recovery furnace. The span of the system shall be set at 70 percent opacity.

(b) Continuous monitoring systems to monitor and record the concentration of TRS emissions (dry basis) and the percent oxygen by volume (dry basis) in the gases discharged into the atmosphere from any lime kiln, recovery furnace, digester system, brown stock washer system, multiple-effect evaporator system black liquor oxidation system, or condensate stripper system except where the provisions of section 4(a) apply. These systems shall be located downstream of the control device(s) and the span(s) of these continuous monitoring system(s) shall be set:

(i) At a TRS concentration of 30 ppm for the TRS continuous monitoring system except that for any cross recovery furnace the span shall be set at 50 ppm.

(ii) At 20 percent oxygen for the continuous oxygen monitoring system.

(c) A monitoring device which measures the combustion temperature at the point of incineration of effluent gases which are emitted from any digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, or condensate stripper system where the provisions of section 4(a) apply. The monitoring device is to be certified by the manufacturer to be accurate within ±1 percent of the temperature being measured.

(d) For a lime kiln or smelt dissolving tank using a scrubber emission control device:

(i) A monitoring device for continuous measurement of the pressure loss of the gas stream through the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within a gage pressure of ±500 pascals (±2) inches water)

(ii) A monitoring device for the continuous measurement of the scrubbing liquid supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±15 percent of the design scrubbing liquid pressure. The pressure sensor or tap is to be located close to the scrubber liquid discharge point. The District may be consulted for alternate locations.

SECTION 6. RECORDKEEPING

Any owner or operator subject to the provisions of this regulation shall, except where the provisions of paragraph (a) and (d) of section 4 apply.

(a) Calculate and record on a daily basis 12-hour average TRS concentrations for the 2 consecutive periods of each operating day. Each 12-hour average shall be determined as the arithmetic mean of the appropriate 12 contiguous 1-hour average TRS concentrations provided by each continuous monitoring system installed under paragraph (b) of section 5.

(b) Calculate and record on a daily basis 12-hour averages oxygen concentrations for the 2 consecutive periods of each operating day for the recovery furnace and lime kiln. These 12-hour averages shall correspond to the 12-hour average TRS concentrations in subsection(a) of this section, and shall be determined as an arithmetic mean of the appropriate 12 contiguous 1-hour average system installed under paragraph (b) of section 5.

(c) Correct all 12-hour TRS concentrations to 10 volume percent oxygen, except that 12-hour average TRS concentrations from a recovery furnace shall be corrected to 8 volume percent using the equation in Appendix A of this regulation.

SECTION 7. EMISSIONS REPORTS

Any owner or operator shall report periods of excess emissions as follows:

(a) For emissions from any recovery furnace, periods of excess emissions are:

(i) All 12-hour averages of TRS concentrations above 5 ppm by volume for straight kraft recovery furnaces and above 25 ppm by volume for cross recovery furnaces.

(ii) All 6-minutes average opacities that exceed 20 percent.

(b) For emissions from lime kiln, periods of excess emissions are all 12-hour TRS concentrations above 8 ppm by volume.

(c) For emissions from digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, or condensate stripper system, periods of excess emissions are:

(i) All 12-hour average TRS concentrations above 5 ppm by volume unless the provisions of subsection (a) of section 5 apply; or

(ii) All periods in excess of 5 minutes and their duration which the combustion temperature is less than 1200°F.

SECTION 8. TEST METHODS AND PROCEDURES

(a) The reference methods in Appendix A of 40CFR60, except as provided in Regulation 1.04 shall be used to determine compliance with the standards as prescribed in sections 3 and 4 of this regulation as follows:

(i) Method 5 for the concentration of particulate matter and the associated moisture content

(ii) Method 1 for sample and velocity traverses

(iii) Method 2 for velocity and volumetric flow rate

(iv) Method 3 for gas analysis when applying reference methods 5 (or 17) and 16.

(v) Method 16 for the concentration of TRS

(vi) Method 9 for visible emissions

(b) For Method 5, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.85 dscm/hr. (0.53 dscf/min.) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the District. Water shall be used as a cleanup solvent instead of acetone in the sample recovery procedure outlined in Method 5.

(c) Method 17 (in-stack filtration) may be used as an alternate method for Method 5 for determining compliance of recovery furnaces provided that a constant value of 0.009 g/dscm (0.004 gr/dscf) is added to the results of Method 17 and the stack temperature is not greater than 205°C (400°F). Water shall be used as a cleanup solvent instead of acetone in the sample recovery procedure outlined in Method 17.

(d) When determining compliance with section 4, use the results of Method 2, Method 16, and the black liquor solids feed rate in the TRS emissions' equation in appendix B of this regulation.

(e) When determining whether a furnace is a straight kraft or a cross recovery furnace, TAPPI Method T.624 shall be used to determine sodium sulfide, sodium hydroxide, and sodium carbonate. These determinations shall be made 3 times daily from the green liquor, and the daily average values shall be coverted to sodium oxide (Na_2O), and entered into the equation in Appendix C of this regulation to determine the green liquor sulfidity.

(f) All concentrations of particulate matter and TRS required to be measured by this regulation, from lime kilns or incinerators shall be corrected to 10 volume percent oxygen, and those concentrations from recovery furnaces shall be made in the manner specifjed in paragraph (c) of section 6.

APPENDIX A TO REGULATION 7.33

CORRECTION OF TRS CONCENTRATIONS

$$C_c = C_m \times \left(\frac{21-X}{21-Y}\right)$$

Where:

C_c = the concentration corrected for oxygen

C_m = the concentration as measured

X = the volumetric oxygen concentration in percentage to be corrected to either 8 percent for recover furnaces or 10 percent for lime kilns, incinerators or other devices

Y = the measured 12-hour average volumetric oxygen concentration

APPENDIX B TO REGULATION 7.33

DETERMINATION OF TRS EMISSION RATE

$$E = \frac{Q}{S} \times (C_1F_1 + C_2F_2 + C_3F_3 + C_4C_4)$$

Where:

E = mass of TRS emitted per units of black liquor solids (g/kg or lbs/ton)

Q = dry volumetric stack-gas flow rate corrected to standard conditions, (dscm/hr or dscf/hr.)

S = black liquor solids feed rate, (kg/hr or lbs/hr)

C_1 = average concentration of hydrogen sulfide during the test period, (PPM)

C_2 = average concentration of methyl mercaptan during the test period, (PPM)

C_3 = average concentration of dimethyl sulfide during the test period, (PPM)

C_4 = average concentration of dimethyl disulfide during the test period, (PPM)

F_1 = 0.001417 g/cu.m. PPM for metric units
= 0.08844 lbs/cu.ft. PPM for English units

F_2 = 0.00200 g/cu.m. PPM for metric units
= 0.1248 lbs/cu.ft. PPM for English units

F_3 = 0.002583 g/cu.m. PPM for metric units
= 0.1612 lbs/cu.ft. PPM for English units

F_4 = 0.003917 g/cu.m PPM for metric units
= 0.2445 lbs/cu.ft PPM for English units

APPENDIX C TO REGULATION 7.33

DETERMINATION OF GREEN LIQUOR SULFIDITY

$$GLS = \frac{100 \times C_a}{C_a + C_b + C_c}$$

Where:

GLS = percent green liquor sulfidity

C_a = average concentration of sodium sulfide expressed as sodium oxide (mg/l)

C_b = average concentration of sodium hydroxide expressed as sodium oxide (mg/l)

C_c = average concentration of sodium carbonate expressed as sodium oxide (mg/l)

REGULATION 7.34 STANDARD OF PERFORMANCE FOR NEW SULFITE PULP MILLS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility which:

(a) Is associated with a sulfite pulp mill;

(b) Is not subject to another standard of performance within these regulations with respect to sulfur oxides;

(c) Commenced on or after April 9, 1972.

SECTION 2. DEFINITIONS

Terms used in this regulation shall have the meaning given them in Regulation 1.02.

SECTION 3. STANDARD FOR SULFUR OXIDES EMISSIONS

No person shall cause or permit sulfur oxides emissions from blow pits, washer vents storage tanks, digester relief, recovery system, etc., to exceed 9.0 lb. per air dried ton of pulp produced.

REGULATION 7.35 STANDARD OF PERFORMANCE FOR NEW ETHYLENE PRODUCING PLANTS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility which means each waste gas stream of any ethylene producing plant commenced on or after April 9, 1972.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 3.

STANDARD FOR HYDROCARBONS

No person shall emit into the atmosphere a waste gas stream from any ethylene producing plant unless the waste gas stream is subjected to 1,300 degrees Fahrenheit for 0.3 seconds or greater in a direct-flame afterburner or equally effective catalytic vapor incinerator. Either device must be equipped with an indicating pyrometer which is positioned in the working area at the operator's eye level.

REGULATION 7.36 STANDARD OF PERFORMANCE FOR NEW VOLATILE ORGANIC COMPOUND WATER SEPARATOR

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility which means each oil-effluent water separator which recovers 200 gallons a day or more of any volatile organic compound from any equipment which processes, refines, stores, or handles hydrocarbons with a Reid vapor pressure of 0.5 pounds or greater commenced on or after April 9, 1972.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Volatile organic compound water separator" means any tank, box, sump, or other container in which any volatile organic compound or product thereof, floating on or entrained or contained in water entering such tank, box, sump, or other container, is physically separated and removed from such water prior to outfall, drainage, or recovery of such water.

(b) "Enclosed container" means a vessel which entirely encloses the content except for pressure relief vents.

(c) "Floating roof" means a vessel cover consisting of double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with with a closure seal or seals to close the space between the roof edge and vessel wall.

(d) "Vapor recovery system" means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from a vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

(e) "Submerged fill pipe" means any fill pipe the discharge of which is entirely submerged when the liquid level is 6 inches above the bottom of the vessel; or when applied to a vessel which is loaded from the side, shall mean any fill pipe the discharge opening of which is entirely submerged when the liquid level is two times the fill pipe diameter above the tank.

SECTION 3. STANDARD FOR HYDROCARBON

The emissions of all hydrocarbon vapors and gases shall be reduced 90 percent by weight. All gauging & sampling devices shall be gas tight except when gauging and/or sampling is in progress. Standards may be met by employing one or more of the following features; floating roof, submerged fill pipes, or a vapor recovery system.

SECTION 4. COMPLIANCE

Any affected facility shall be in compliance on start up.

SECTION 4. STANDARD FOR SULFUR DIOXIDE

(a) On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any roaster, smelting furnace or copper converter any gases which contain sulfur dioxide in excess of 0.065 percent by volume, except as provided in subsections (b) and (c) of this subsection.

(b) Reverberatory smelting furnaces shall be exempted from paragraph (a) of this subsection during periods when the total smelter charge at the primary copper smelter contains a high level of volatile impurities.

(c) A change in the fuel combusted in a reverberatory furnace shall not be considered a modification under this regulation.

SECTION 5. STANDARD FOR VISIBLE EMISSIONS

(a) On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any dryer any visible emissions which exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this section shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in section 4 of this regulation, any visible emissions which exhibit greater than 20 percent opacity.

SECTION 6. MONITORING OF OPERATIONS

(a) The owner or operator of any primary copper smelter subject to paragraph (b) of section 4 shall keep a monthly record of the total smelter charge and weight percent (dry basis) of arsenic, antimony, lead and zinc contained in this charge. The analytical methods and procedures employed to determine the weight of the total smelter charge and the weight percent of arsenic, antimony, lead and zinc shall be approved by the District and shall be accurate to within plus or minus 10 percent.

(b) The owner or operator of any primary copper smelter subject to the provisions of this regulation shall install and operate:

(i) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any dryer.

(ii) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any roaster, smelting furnace or copper convertor subject to paragraph (a) of section 4 this regulation. The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

a. The continuous monitoring system performance evaluation required under paragraph (c) of section 6 of Regulation 7.01 shall be completed prior to the initial performance test required under section 4 of Regulation 7.01. During the performance evaluation, the psan of the continuous monitoring system may be set at a sulfur dioxide concentration of 0.15 percent by volume if necessary to maintain the system output between 20 percent and 90 percent of full scale. Upon completion of the continuous monitoring system performance evaluation, the span of the continous monitoring system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

b. For the purpose of the continuous monitoring system performance evaluation required under paragraph (c) of section 6 of Regulation 7.01, the reference method referred to under the Field Test for Accuracy (Relative) in Performance Specification 2 of Appendix B of 40 CFR 60 shall be Reference Method 6. For the performance evaluation each concentration measurement shall be of one hour duration. The pollutant gas used to prepare the calibration gas mixture required under paragraph 2.1, Performance Specification 2 of Appendix B of 40 CFR 60, and the calibration checks under paragraph (d) of section 6 of Regulation 7.01 shall be sulfur dioxide.

REGULATION 7.37. STANDARD OF PERFORMANCE FOR NEW PRIMARY COPPER SMELTERS

SECTION 1. APPLICABILITY

The provisions of this regulation are applicable to the following affected facilities in primary copper smelters: dryer, roaster, smelting furnace, and copper converter, commenced on or after the classification date defined below.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Primary copper smelter" means any installation or any intermediate process engaged in the production of copper from copper sulfide ore concentrates through the use of pyrometa lurgical techniques.

(b) "Dryer" means any facility in which a copper sulfide ore concentrate charge is heated in the presence of air to eliminate a portion of the moisture from the charge, provided less than 5 percent of the sulfur contained in the charge is eliminated in the facility.

(c) "Roaster" means any facility in which a copper sulfide ore concentrate charge is heated in the presence of air to eliminate a significant portion (5 percent or more) of the sulfur contained in the charge.

(d) "Calcine" means the solid materials produced by a roaster.

(e) "Smelting" means processing techniques for the melting of a copper sulfide or concentrate or calcine charge leading to the formation of separate layers of molten slag, molten copper and/or copper matte.

(f) "Classification date" means October 16, 1974.

(g) "Smelting furnace" means any vessel in which the smelting of copper sulfide ore concentrates or calcines is performed and in which the heat necessary for smelting is provided by an electric current, rapid oxidation of a portion of the sulfur contained in the concentrate as it passes through an oxidizing atmosphere, or the combustion of a fossil fuel.

(h) "Copper converter" means any vessel to which copper matte is charged and oxidized to copper.

(i) "Sulfuric acid plant" means any facility producing sulfuric acid by the contact process.

(j) "Fossil fuel" means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

(k) "Reverberatory smelting furnace" means any vessel in which the smelting of copper sulfide ore concentrates or calcines is performed and in which the heat necessary for smelting is provided primarily by combustion of a fossil fuel.

(l) "Total smelter charge" means the weight (dry basis) of all copper sulfides ore concentrates processed at a primary copper smelter, plus the weight of all other solid materials introduced into the roasters and smelting furnaces at a primary copper smelter, except calcine, over a one-month period.

(m) "High level of volatile impurities" means a total smelter charge containing more than 0.2 weight percent arsenic, 0.1 weight percent antimony, 4.5 weight percent lead or 5.5 weight percent zinc, on a dry basis.

SECTION 3. STANDARD FOR PARTICULATE MATTER

On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any dryer any gases which contain particulate matter in excess of fifty (50) mg/dscm (0.022 gr/dscf).

(c) Six-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the four consecutive 6-hour periods of each operating day. Each 6-hour average shall be determined as the arithmetic mean of the appropriate six continuous one-hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under subparagraph (ii) of this subsection.

(d) For the purpose of reports required under Regulation 1.06, periods of excess emissions that shall be reported are defined as follows:

(i) Opacity. Any six-minute period during which the average opacity, measured by the continuous monitoring system installed under paragraph (b) of this section, exceeds the standard under section 5 of this regulation.

(ii) Sulfur dioxide. Any six-hour period as described in paragraph (c) of this section, during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under paragraph (b) of this section exceeds the standard under section 4 of this regulation.

SECTION 7. TEST METHODS AND PROCEDURES

(a) The reference methods as defined in Regulation 1.06, except as provided for in Regulation 1.04, shall be used to determine compliance with the standards prescribed in sections 3, 4, and 5 of this regulation as follows:

(i) Method 5 for the concentration of particulate matter and the associated moisture content;

(ii) Sulfur dioxide concentrations shall be determined using the continuous monitoring system installed in accordance with paragraph (b) of section 6 of this regulation. One 6-hour average period shall constitute one run. The monitoring system drift during any run shall not exceed 2 percent of span.

(b) For Method 5, Method 1 shall be used for selecting the sampling site and the number of traverse points. Method 2 for determining velocity and volumetric flow rate and Method 3 for determining the gas analysis. The sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller times or volumes, when necessitated by process variables or other factors may be approved by the District.

(ii) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any roaster subject to section 4 of this regulation. The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

a. The continuous monitoring system performance evaluation required under paragraph (c) of section 6 of Regulation 7.01 shall be completed prior to the initial performance test required under section 4 of Regulation 7.01. During the performance evaluation, the span of the continuous monitoring system may be set at a sulfur dioxide concentration of 0.15 percent by volume if necessary to maintain the system output between 20 percent and 90 percent of full scale. Upon completion of the continuous monitoring system performance evaluation, the span of the continuous monitoring system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

b. For the purpose of the continuous monitoring system performance evaluation required under paragraph (c) of section 6 of Regulation 7.01, the reference method referred to under the Field Test for Accuracy (Relative) in Performance Specification 2 of Appendix B of 40 CFR 60 shall be reference Method 6. For the performance evaluation, each concentration measurement shall be of one hour duration. The pollutant gas used to prepare the calibration gas mixtures required under paragraph 2.1, Performance Specification 2 of Appendix B of 40 CFR 60, and for calibration checks under paragraph (d) of section 6 of Regulation 7.01 shall be sulfur dioxide.

(b) Two-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the 12 consecutive 2 hour periods of each operating day. Each two-hour average shall be determined as the arithmetic mean of the appropriate 2 continuous one-hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under subsection (a) of this section.

(c) For the purpose of reports required under paragraph (c) of section 5 of Regulation 7.01, periods of excess emissions that shall be reported are defined as follows:

(i) Opacity. Any six-minute period during which the average opacity, as measured by the continuous monitoring system installed under subsection (a) of this section, exceeds the standard under paragraph (a) of section 5 of this regulation.

(ii) Sulfur dioxide. Any 2 hour period, as described in paragraph (b) of this section, during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under paragraph (a) of this subsection, exceeds the standard under section 4 of this regulation.

SECTION 7. TEST METHODS AND PROCEDURES

(a) The reference methods in Appendix A to 40 CFR 60, except as provided for in Regulation 1.04, shall be used to determine compliance with the standards prescribed in sections 3, 4, and 5 of this regulation as follows:

(i) Method 5 for the concentration of particulate matter and the associated moisture content;

(ii) Sulfur dioxide concentrations shall be determined using the continuous monitoring system installed in accordance with paragraph (a) of section 6 of this regulation. One 2-hour average period shall constitute one run;

(iii) For Method 5, Method 1 shall be used for selecting the sampling site and the number of traverse points, Method 2 for determining velocity and volumetric flow rate, and Method 3 for determining the gas analysis. The sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller times or volumes, when necessitated by process variables or other factors, may be approved by the District.

REGULATION 7.38. STANDARD OF PERFORMANCE FOR NEW PRIMARY ZINC SMELTERS

SECTION 1. APPLICABILITY

The provisions of this regulation are applicable to the following affected facilities in primary zinc smelters; roaster and sintering machine, which commenced on or after the classification date defined below.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Primary zinc smelters" means any installation engaged in the production, or any intermediate process in the production, of zinc or zinc oxide from zinc sulfide ore concentrates through the use of pyrometallurgical techniques.

(b) "Roaster" means any facility in which a zinc sulfide ore concentrate charge is heated in the presence of air to eliminate a significant portion (more than 10 percent) of the sulfur contained in the charge.

(c) "Classification date" means October 16, 1974.

(d) "Sintering machine" means any furnace in which calcines are heated in the presence of air to agglomerate the calcines into a hard porous mass called "sinter."

(e) "Sulfuric acid plant" means any facility producing sulfuric acid by the contact process.

SECTION 3. STANDARD FOR PARTICULATE MATTER

On and after the date on which theperformance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any sintering machine any gases which contain particulate matter in excess of 50 mg/dscf (0.022 gr/dscf).

SECTION 4. STANDARD FOR SULFUR DIOXIDE

(a) On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any roaster any gases which contain sulfur dioxide in excess of 0.065 percent by volume.

(b) Any sintering machine which eliminates more than 10 percent of the sulfur initially contained in the zinc sulfide ore concentrates will be considered as a roaster under paragraph (a) of this section.

SECTION 5. STANDARD FOR VISIBLE EMISSIONS

(a) On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any sintering machine any visible emissions which exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in section 4 of this regulation any visible emissions which exhibit greater than 20 percent opacity.

SECTION 6. MONITORING OF OPERATIONS

(a) The owner or operator of any primary zinc smelter subject to the provisions of this regulation shall install and operate:

(i) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any sintering machine. The span of this system shall be set at 80 to 100 percent opacity;

to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in section 4 of this regulation, any visible emissions which exhibit greater than 20 percent opacity.

SECTION 6. MONITORING OF OPERATIONS

(a) The owner or operator of any primary lead smelter subject to the provisions of this regulation shall install and operate:

(i) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any blast furnace or sintering machine discharge end. The span of this system shall be set at 100 percent opacity;

(ii) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any sintering machine, electric furnace, or converter subject to section 4 of this regulation. The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

a. The continuous monitoring system performance evaluation required under paragraph (c) of section 6 of Regulation 7.01 shall be completed prior to the initial performance test required under Regulation 7.01 section 4. During the performance evaluation, the span of the continuous monitoring system may be set at a sulfur dioxide concentration of 0.15 percent by volume if necessary to maintain the system output between 20 percent and 90 percent of full scale. Upon completion of the continuous monitoring system performance evaluation, the span of the continuous monitoring system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

SECTION 7. TEST METHODS AND PROCEDURES

(a) The reference methods in Appendix A to 40 CFR 60, except as provided for in Regulation 1.04, shall be used to determine compliance with the standards prescribed in sections 3, 4, and 5 as follows:

(i) Method 5 for the concentration of particulate matter and the associated moisture content;

(ii) Sulfur dioxide concentrations shall be determined using the continuous monitoring system installed in accordance with paragraph (a) of section 6 of this regulation. One 2 hour average period shall constitute one run.

(b) For Method 5, Method 1 shall be used for selecting the sampling site and the number of traverse points, Method 2 for determining velocity and volumetric flow rate, and Method 3 for determining the gas analysis. The sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller times or volumes, when necessitated by process variables or other factors, may be approved by the District.

REGULATION 7.39 STANDARD OF PERFORMANCE FOR NEW PRIMARY LEAD SMELTERS

SECTION 1. APPLICABILITY

The provisions of this regulation are applicable to the following affected facilities in primary lead smelters: sintering machine, sintering machine discharge end, blast furnace, dross reverberatory furnace, electric smelting furnace, and converter, which commenced on or after the classification date defined below.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Primary lead smelter" means any installation of any intermediate process engaged in the production of lead from lead sulfide ore concentrates through the use of pyrometallurgical techniques.

(b) "Sintering machine" means any furnace in which a lead sulfide ore concentrate charge is heated in the presence of air to eliminate sulfur contained in the charge and to agglomerate the charge into a hard porous mass called "sinter."

(c) "Sinter bed" means the lead sulfur ore concentrate charge within a sintering machine.

(d) "Sintering machine discharge end" means any apparatus which receives sinter as it is discharged from the conveying grate of a sintering machine.

(e) "Blast furnace" means any reduction furnace to which sinter is charged and which forms separate layers of molten slag and lead bullion.

(f) "Dross reverberatory furnace" means any furnace used for the removal or refining of impurities from lead bullion.

(g) "Electric smelting furnace" means any furnace in which the heat necessary for smelting of the lead sulfide ore concentrate charge is generated by passing an electric current through a portion of the molten mass in the furnace.

(h) "Converter" means any vessel to which lead concentrate or bullion is charged and refined.

(i) "Sulfuric acid plant" means any facility producing sulfuric acid by the contact process.

(j) "Classification date" means October 16, 1974.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end any gases which contain particulate matter in excess of 59 mg/dscm (0.022 gr/dscf).

SECTION 4. STANDARD FOR SULFUR DIOXIDE

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any sintering machine electric smelting furnace, or converter gases which contain sulfur dioxide in excess of 0.065 percent by volume.

SECTION 5. STANDARD FOR VISIBLE EMISSIONS

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end any visible emissions which exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject

(ii) From any anode bake plant any gases which exhibit 20 percent opacity and greater.

SECTION 4. STANDARD FOR FLUORIDES

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere gases which contain total fluorides in excess of:

(i) 1 kg/metric ton (2 lb/ton) of aluminum produced for vertical stud soderberg and horizontal stud soderberg plants;

(ii) 0.95 kg/metric ton (1.9 lb/ton) of aluminum produced for potroom groups at prebaked plants; and

(iii) 0.05 kg/metric ton (0.1 lb/ton) of aluminum equivalent for anode bake plants.

SECTION 5. MONITORING OF OPERATIONS

(a) The owner or operator of any applicable affected facility subject to the provisions of this regulation shall install, calibrate, maintain, and operate monitoring devices which can be used to determine daily the weight of the aluminum and anode produced. The weighing devices shall have an accuracy of ± 5 percent over their operating range.

(b) The owner or operator of any applicable affected facility shall maintain a record of daily production rates of aluminum and anodes, raw material feed rates, and cell or potline voltages.

(c) The owner or operator of any affected facility shall install, use, and maintain ambient air monitoring equipment in accordance with such methods as the District shall prescribe; establish and maintain records of same; and make periodic emission reports at intervals prescribed by the District.

SECTION 6. TEST METHODS AND PROCEDURES

(a) Except as provided in Regulation 1.04, reference methods specified in Appendix A of 40 CFR 60 shall be used to determine compliance with the standards prescribed in section 4 of this regulation as follows:

(i) For sampling emissions from stacks:

a. Method 13A or 13B for the concentration of total fluoride and the associated moisture content;

b. Method 1 for sample and velocity traverses;

c. Method 2 for velocity and volumetric flow rate; and

d. Method 3 for gas analysis.

(ii) For sampling emissions from roof monitors not employing stacks or pollutant collection systems:

a. Method 14 for the concentration of total fluorides and associated moisture content;

b. Method 1 for sample and velocity traverses;

c. Method 2 and Method 14 for velocity and volumetric flow rate; and

d. Method 3 for gas analysis.

(iii) For sampling emissions from roof monitors not employing stacks but equipped with pollutant collection systems the procedures under Regulation 1.04 shall be followed.

(b) For Method 13A or 13B, the sampling time for each run shall be at least 8 hours for any potroom sample and at least 4 hours for any anode bake plant sample, and the minimum sample volume shall be 6.8 dscm (240 dscf) for any potroom sample and 3.4 dscm (120 dscf) for any anode bake plant sample except that shorter sampling times or small volumes, when necessitated by process variables or other factors, may be approved by the District.

REGULATION 7.40. STANDARD OF PERFORMANCE FOR NEW PRIMARY ALUMINUM REDUCTION PLANTS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility which means each potroom group and anode bake plant (within a primary aluminum reduction plant) commenced on or after the classification date defined below.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Primary aluminum reduction plant" means any source manufacturing aluminum by electrolytic reduction.

(b) "Anode bake plant" means an affected facility which produces carbon anodes for use in a primary aluminum reduction plant.

(c) "Potroom" means a building unit which houses a group of electrolytic cells in which aluminum is produced.

(d) "Potroom group" means an uncontrolled potroom, a potroom which is controlled individually, or a group of potrooms ducted to the same control system.

(e) "Roof monitor" means that portion of the roof of a potroom, where gases not captured at the cell, exit from the potroom.

(f) "Aluminum equivalent" means an amount of aluminum which can be produced from a ton of anodes produced by an anode bake plant.

(g) "Total fluorides" means elemental fluorine and all fluorides compounds, as measured by reference methods specified in section 6 or equivalent or alternative methods.

(h) "Primary control system" means an air pollution control system designed to remove gaseous and particulate fluorides from exhaust gases which are captured at the cell.

(i) "Prebake plant" means any primary aluminum reduction plant whose electrolytic reduction cells utilize carbon anodes manufactured in an anode bake plant.

(j) "Vertical stud solderberg plant" means any primary aluminum reduction plant whose electrolytic reduction cells utilize an anode consisting of a rectangular container, open at the top and bottom, suspended above the cell, into which carbon paste is fed at intervals, becoming baked by the heat of the cell as it gradually descends into the container. Current carrying studs project vertically into the anode through the unbaked paste and into the baked portion of the anode.

(k) "Horizontal stud solderberg plant" means any primary aluminum reduction plant whose electrolytic reduction cells utilize an anode consisting of a rectangular container open at the top and bottom, suspended above the cell, into which carbon paste is fed at intervals becoming baked by the heat of the cell as it gradually descends into the container. Rows of studs in channel assemblies project laterally into the paste and move with the anode.

(l) "Secondary control system" means an air pollution control system designed to remove gaseous and particulate fluorides which escape capture by the primary control system.

(m) "Applicable affected facility" means each potroom group and anode bake plant within a primary aluminum reduction plant.

(n) "Classification date" means October 23, 1974.

SECTION 3. STANDARD FOR VISIBLE EMISSIONS

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere:

(1) From any potroom group any gases which exhibit 10 percent opacity or greater;

APPENDIX A TO REGULATION 7.40

EQUATION FOR POTROOM GROUP EMISSIONS

$$E_p = \frac{(CQ)_1\ 10^{6} + (CQ)_2\ 10^{-6}}{M}$$

Where:

E_p = Potroom group emissions of total fluorides in kg/metric ton of aluminum produced

C = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B, or Method 14, as applicable

Q = Volumetric flow rate of the effluent gas stream in dscm/hour as determined by Method 2 and/or Method 14, as applicable.

10^{-6} = Conversion factor for mg to kg

M = Rate of aluminum production in metric ton/hour as determined by paragraph (d) of section 6 of this regulation

$(CQ)_2$ = Product of C and Q for measurements of primary control system effluent gas streams

$(CQ)_1$ = Product of C and Q for measurements of secondary control system or roof monitor effluent gas stream

APPENDIX B TO REGULATION 7.40

EQUATION FOR ANODE BAKE PLANT EMISSIONS

$$E_a = \frac{(CQ)\ 10^{-6}}{M_b}$$

Where:

E_a = Anode bake plant emissions of total fluorides in kg/metric ton of aluminum equivalent

C = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B

Q = Volumetric flow rate of the effluent gas stream in dscm/hour as determined by Method 2

10^{-6} = Conversion factor from mg to kg

M_b = Aluminum equivalent for anodes produced by anode bake plants in metric ton/hour as determined by paragraph (e) of section 6 of this regulation

(c) The air pollution control system for each affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined using applicable methods specified under paragraph (a) of this section.

(d) The rate of aluminum production shall be determined as follows:

(i) Determine the weight of the aluminum in metric tons produced during a period from the last tap before a run starts until the first tap after the run ends using a monitoring device which meets the requirements of paragraph (a) of section 5 of this regulation;

(ii) Divide the weight of aluminum produced by the length of the period in hours.

(e) For anode bake plants, the aluminum equivalent for anodes produced shall be determined as follows:

(i) Determine the average weight (metric tons) of anodes produced in the anode bake plant during a representative oven cycle using a monitoring device which meets the requirements of paragraph (a) of section 5 of this regulation;

(ii) Determine the average rate of anode production by dividing the total weight of anodes produced during the representative oven cycle by the length of the cycle in hours;

(iii) Calculate the aluminum equivalent for anodes produced by multiplying the average rate of anode production by two. (Note: an owner or operator may establish a different multiplication factor by submitting production records of the tons of aluminum produced and the concurrent tons of anode consumed by potrooms.);

(iv) The owner or operator shall submit production records of the tons of aluminum produced and the concurrent tons of anodes consumed by potrooms during a representative production day. A second aluminum equivalent for anodes produced will be calculated by dividing the tons of aluminum produced by the concurrent tons of anode consumed. The smaller of the aluminum equivalents for anodes produced, as calculated under this subparagraph and subparagraph (iii) above, shall be used to determine the lbs. fluorides/tons of aluminum equivalent for anode bake plants.

(f) For each run, potroom group emissions expressed in kg/metric ton of aluminum produced shall be determined using the equation in Appendix A of this regulation.

(g) For each run, as applicable, anode bake plant emissions expressed in kg/metric ton of aluminum equivalent shall be determined using the equation in Appendix B of this regulation.

(c) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately accurately determined by applicable test methods and procedures.

(d) Equivalent phosphorus pentoxide feed shall be determined as follows:

(i) Determine the total mass rate in metric ton/hour of phosphorus-bearing feed during each run using a flow monitoring device meeting the requirements of paragraph (a) of section 4 of this regulation;

(ii) Calculate the equivalent phosphorus pentoxide feed by multiplying the percentage of phosphorus pentoxide content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9), times the total mass rate of phosphorus-bearing feed. AOAC Method 9 is published in the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12. Other methods may be approved by the District.

(e) For each run, emissions expressed in g/metric ton of the equivalent phosphorus pentoxide feed shall be determined using the equation given in Appendix A of this regulation.

REGULATION 7.41 STANDARD OF PERFORMANCE FOR THE PHOSPHATE FERTILIZER INDUSTRY: NEW WET-PROCESS PHOSPHORIC ACID PLANTS

SECTION 1. APPLICABILITY

The affected facility to which the provisions of this regulation apply is each wet-process phosphoric acid plant. For the purpose of this regulation, the affected facility includes any combination of: reactors, filters, evaporators, and hotwells, commenced on or after the classification date.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Wet-process phosphoric acid plant" means any facility manufacturing phosphoric acid by reacting phosphate rock and acid.

(b) "Classification date" means October 22, 1974.

(c) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in section 5 of this regulation, or equivalent or alternative methods.

(d) "Equivalent phosphorus pentoxide feed" means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

SECTION 3. STANDARD FOR FLUORIDES

On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 10.0 g/metric ton of equivalent phosphorus pentoxide feed (0.020 lb/ton).

SECTION 4. MONITORING OF OPERATIONS

(a) The owner or operator of any wet-process phosphoric acid plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate a monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The monitoring device shall have an accuracy of ± 5 percent over its operating range.

(b) The owner or operator of any wet-process phosphoric acid plant shall maintain a daily record of equivalent phosphorus pentoxide feed by first determining the total mass rate in metric ton/hour flow rate which meets the requirements of paragraph (a) of this section and then by proceeding according to subparagraph (i) of paragraph (d) of section 5 of this regulation.

(c) The owner or operator of any wet-process phosphoric acid plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ± 5 percent over its operating range.

SECTION 5. TEST METHODS AND PROCEDURES

(a) Reference methods in Appendix A of 40 CFR 60, except as provided in Regulation 1.04, shall be used to determine compliance with the standard prescribed in section 3 of this regulation as follows:

- (i) Method 13A of 13B for the concentration of total fluorides and the associated moisture content;
- (ii) Method 1 for sampling and velocity traverses;
- (iii) Method 2 for velocity and volumetric flow rate; and
- (iv) Method 3 for gas analysis.

(b) For Method 13A or 13B, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be 0.85 dscm (30 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the District.

APPENDIX A TO REGULATION 7.41

DETERMINATION OF EMISSIONS OF TOTAL FLUORIDES

$$E = \frac{C\ Q\ (10^{-3})}{M}$$

Where:

E = Emissions of total fluorides in g/metric ton of equivalent phosphorus pentoxide feed

C = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B

Q = Volumetric flow rate of the effluent gas stream in dscm/hour as determined by Method 2.

10^{-3} = Conversion factor for mg to g

M = Equivalent phosphorus pentoxide feed in metric ton/hour as determined by paragraph (d) of section 5.

(30 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the District.

(c) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(d) Equivalent phosphorus pentoxide feed shall be determined as follows:

(i) Determine the total mass rate in metric tons/hour of phosphorus-bearing feed during each run using a flow monitoring device meeting the requirements of paragraph (a) of section 4 of this regulation;

(ii) Calculate the equivalent phosphorus pentoxide feed by multiplying the percentage phosphorus pentoxide content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9), times the total mass rate of phosphorus-bearing feed. AOAC Method 9 is published in the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12. Other methods may be approved by the District.

(e) For each run, emissions expressed in g/metric ton of equivalent phosphorus pentoxide feed shall be determined using the equation given in Appendix A of this regulation.

APPENDIX A TO REGULATION 7.42

DETERMINATION OF EMISSIONS OF TOTAL FLUORIDES

$$E = \frac{C\ Q\ (10^{-3})}{M}$$

Where:

E = Emissions of total fluorides in g/metric ton of equivalent phosphorus pentoxide feed

C = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B

Q = Volumetric flow rate of the effluent gas stream in dscm/hour as determined by Method 2

10^{-3} = Conversion factor for mg to g

M = Equivalent phosphorus pentoxide feed in metric ton/hour as determined by paragraph (d) of section 5

REGULATION 7.42. STANDARD OF PERFORMANCE FOR THE PHOSPHATE FERTILIZER INDUSTRY: NEW SUPERPHOSPHORIC ACID PLANTS

SECTION 1. APPLICABILITY

The affected facility to which the provisions of this regulation apply is each superphosphoric acid plant. For the purpose of this regulation the affected facility includes any combination of: evaporators, hot-wells, acid sumps, and cooling tanks, commenced on or after the classification date defined below.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Superphosphoric acid plant" means any facility which concentrates wet-process phosphoric acid to sixty-six (66) percent or greater phosphorous pentoxide content by weight for eventual consumption as a fertilizer.

(b) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in section 5 of this regulation, or equivalent or alternative methods.

(c) "Equivalent phosphorus pentoxide feed" means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

(d) "Classification date" means October 22, 1974.

SECTION 3. STANDARD FOR FLUORIDES

On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 5.0 g/metric ton of equivalent phosphorus pentoxide feed (0.010 lb/ton).

SECTION 4. MONITORING OF OPERATIONS

(a) The owner or operator of any superphosphoric acid plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ± five (5) percent over its operating range.

(b) The owner or operator of any superphosphoric acid plant shall maintain a daily record of equivalent phosphorus pentoxide feed by first determining the total mass rate in metric tons/hour of phosphorus-bearing feed using a flow monitoring device meeting the requirements of paragraph (a) of this section and then by proceeding according to paragraph (d) of section 5.

(c) The owner or operator of any superphosphoric acid plant subject to the provisions of this regulation shall install, calibrate, maintain and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ± five (5) percent over its operating range.

SECTION 5. TEST METHODS AND PROCEDURES

(a) Reference methods in Appendix A of 40 CFR 60, except as provided in Regulation 1.04, shall be used to determine compliance with the standard prescribed in section 3 of this regulation as follows:

(i) Method 13A or 13B for the concentration of total fluorides and the associated moisture content;

(ii) Method 1 for sampling and velocity traverses;

(iii) Method 2 for velocity and volumetric flow rate; and

(iv) Method 3 for gas analysis.

(b) For Method 13A or 13B, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be at least 0.85 dscm

REGULATION 7.43. STANDARD OF PERFORMANCE FOR THE PHOSPHATE FERTILIZER INDUSTRY: NEW DIAMMONIUM PHOSPHATE PLANTS

SECTION 1. APPLICABILITY

The affected facility to which the provisions of this section apply is each granular diammonium phosphate plant. For the purpose of this section, the affected facility includes any combination of: reactors, granulators, dryers, coolers, screens and mills, commenced on or after the classification date defined below.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Granular diammonium phosphate plant" means any plant manufacturing granular diammonium phosphate by reacting phosphoric acid with ammonia.

(b) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in section 5 of this regulation, or equivalent or alternative methods.

(c) "Equivalent phosphorus pentoxide feed" means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

(d) "Classification date" means October 22, 1974.

SECTION 3. STANDARD FOR FLUORIDES

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this section shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 30 g/metric ton of equivalent phosphorus pentoxide feed (0.060 lb/ton).

(b) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(c) Equivalent phosphorus pentoxide feed shall be determined as follows:

   (i) Determine the total mass rate in metric ton/hr of phosphorus-bearing feed during each run using a flow monitoring device meeting the requirements of paragraph (a) of section 4 of this regulation.

   (ii) Calculate the equivalent phosphorus pentoxide feed by multiplying the percentage phosphorus pentoxide content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9) times the total mass rate of phosphorus-bearing feed. AOAC Method 9 is published in the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12. Other methods may be approved by the District.

(d) For each run, emissions expressed in g/metric ton of equivalent phosphorus pentoxide feed shall be determined using the equation in Appendix A to this regulation.

(iv) Method 3 for gas analysis.

(b) For Method 13A or 13B, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be at least 0.85 dscm (30 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the District.

(c) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(d) Equivalent phosphorus pentoxide feed shall be determined as follows:

(i) Determine the total mass rate in metric tons/hr of phosphorus-bearing feed during each run using a flow monitoring device meeting the requirements of paragraph (a) of section 4 of this regulation.

(ii) Calculate the equivalent phosphorus pentoxide feed by multiplying the percentage phosphorus pentoxide content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9), times the total mass rate of phosphorus-bearing feed. AOAC Method 9 is published in the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12. Other methods may be approved by the District.

(e) For each run, emissions expressed in g/metric ton of equivalent phosphorus pentoxide feed shall be determined using the equation in Appendix A of this regulation.

REGULATION A TO REGULATION 7.44

DETERMINATION OF EMISSIONS OF TOTAL FLUORIDES

$$E = \frac{CQ\ (10^{-3})}{M}$$

Where:

E = Emissions of total fluorides in g/metric ton of equivalent phosphorus pentoxide feed

C = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B

Q = Volumetric flow rate of the effluent gas stream in dscm/hr as determined by Method 2

10^{-3} = Conversion factor for mg to g

M = Equivalent phosphorus pentoxide feed in metric tons/hr as determined by paragraph (d) of section 5 of this regulation.

APPENDIX A TO REGULATION 7.43

EQUATION FOR EQUIVALENT PHOSPHORUS PENTOXIDE FEED EMISSIONS

$$E = \frac{(CQ)\,10^{-3}}{M}$$

Where:

E = emissions of total fluorides in g/metric ton of equivalent phosphorus pentoxide

C = concentration of total fluorides in mg/dscm as determined by Method 13A or 13B

Q = volumetric flow rate of the effluent gas stream in dscm/hr as determined by Method 2

10^{-3} = conversion factor for mg to g

M = equivalent phosphorus pentoxide feed in metric tons/hr as determined by subparagraph (ii) of paragraph (d) of section 5 of this regulation

REGULATION 7.44 STANDARD OF PERFORMANCE FOR THE PHOSPHATE FERTILIZER INDUSTRY: NEW TRIPLE SUPERPHOSPHATE PLANTS

SECTION 1. APPLICABILITY

The affected facility to which the provisions of this regulation apply is each triple superphosphate plant. For the purpose of this section, the affected facility includes any combination of: mixers, curing belts (dens), reactors, granulators, dryers, cookers, screens, mills and facilities which store run-of-pile triple superphosphate, commenced on or after the classification date defined below.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Classification date" means October 22, 1974.

(b) "Triple superphosphate plant" means any facility manufacturing triple superphosphate by reacting phosphate rock with phosphoric acid. A run-of-pile triple superphosphate plant includes curing and storing.

(c) "Run-of-pile triple superphosphate" means any triple superphosphate that has not been processed in a granulator and is composed of particulates at least 25 percent by weight of which (when not caked) will pass through a 16 mesh screen.

(d) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in section 5, or equivalent or alternative methods.

(e) "Equivalent phosphorus pentoxide feed" means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

SECTION 3. STANDARD FOR FLUORIDES

(a) On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 100 g/metric ton of equivalent phosphorus feed (0.20 lb/ton).

SECTION 4. MONITORING OF OPERATIONS

(a) The owner or operator of any triple superphosphate plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ± 5 percent over its operating range.

(b) The owner or operator of any triple superphosphate plant shall maintain a daily record of equivalent phosphorus pentoxide feed by first determining the total mass rate in metric tons/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of paragraph (a) of this subsection and then by proceeding according to subparagraph (ii) of paragraph (d) of section 5.

(c) The owner or operator of any triple superphosphate plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ± 5 percent over its operating range.

SECTION 5. TEST METHODS AND PROCEDURES

(a) Reference methods in Appendix A of 40 CFR 60, except as provided for in Regulation 1.04 shall be used to determine compliance with the standard prescribed in section 3 of this regulation as follows:

(i) Method 13A or 13B for the concentration of total fluorides and the associated moisture content,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 for velocity and volumetric flow rate, and

(b) For Method 13A or 13B, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be at least 0.85 dscm (30 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the District.

(c) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(d) Except as provided under paragraph (e) of this section, all performance tests on granular triple superphosphate storage facilities shall be conducted only when the following quantities of product are being cured or stored in the facility:

(i) Total granular triple superphosphate at least 10 percent of the amount of triple superphosphate in the building;

(ii) Fresh granular triple superphosphate at least 20 percent of the amount of triple superphosphate in the building.

(e) If the provisions set forth in paragraph (ii) of paragraph (d) of this section exceed production capabilities for fresh granular triple superphosphate, the owner or operator shall have at least 5 days maximum production of fresh granular triple superphosphate in the building during a performance test.

(f) Equivalent phosphorous pentoxide stored shall be determined as follows:

(i) Determine the total mass stored during each run using an accountability system meeting the requirements of paragraph (a) of section 4 of this regulation.

(ii) Calculate the equivalent phosphorus pentoxide stored by multiplying the percentage phosphorus pentoxide content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9) times the total mass stored. AOAC Method 9 is published in the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12. Other methods may be approved by the District.

(g) For each run, emissions expressed in g/hr/metric ton of equivalent phosphorus pentoxide stored shall be determined using the equation given in Appendix A of this regulation.

APPENDIX A TO REGULATION 7.45

DETERMINATION OF EMISSIONS OF TOTAL FLUORIDES

$$E = \frac{CQ\,(10^{-3})}{M}$$

where:

E = Emissions of total fluorides in g/metric ton of equivalent phosphorus pentoxide feed.

C = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B.

Q = Volumetric flow rate of the effluent gas stream in dscm/hr as determined by Method 2.

10^{-3} = Conversion factor for mg to g.

M = Equivalent phosphorus pentoxide feed in metric ton/hr as determined by paragraph (d) of section 5 of this regulation.

REGULATION 7.45. STANDARD OF PERFORMANCE FOR THE PHOSPHATE FERTILIZER INDUSTRY: NEW GRANULAR TRIPLE SUPERPHOSPHATE STORAGE FACILITIES

SECTION 1. APPLICABILITY

The affected facility to which the provisions of this regulation apply is each granular triple superphosphate storage facility. For the purpose of this regulation, the affected facility includes any combination of: storage or curing piles, conveyors, elevators, screens and mills, commenced on or after the classification date defined below.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Granular triple superphosphate storage facility" means any facility curing or storing granular triple superphosphate.

(b) "Total fluorides" means elemental fluorine and all fluoride compounds as measured by reference methods specified in section 5 of this regulation, or equivalent or alternative methods.

(c) "Classification date" means October 22, 1974.

(d) "Equivalent phosphorus pentoxide stored" means the quantity of phosphorus, expressed as phosphorus pentoxide, being cured or stored in the affected facility.

(e) "Fresh granular triple superphosphate" means granular triple superphosphate produced no more than 10 days prior to the date of the performance test.

SECTION 3. STANDARD FOR FLUORIDES

On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 0.25 g/hr/metric ton of equivalent phosphorus pentoxide stored (.0005 lb/hr/ton of equivalent phosphorus pentoxide stored).

SECTION 4. MONITORING OF OPERATIONS

(a) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this regulation shall maintain an accurate account of triple superphosphate in storage to permit the determination of the amount of equivalent phosphorus pentoxide stored.

(b) The owner or operator of any granular triple superphosphate storage facility shall maintain a daily record of total equivalent phosphorus pentoxide stored by multiplying the percentage phosphorus pentoxide content, as determined by paragraph (f) subparagraph (ii) of section 5 of this regulation times the total mass of granular triple superphosphate stored.

(c) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this regulation shall install, calibrate, maintain and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ± 5 percent over its operating range.

SECTION 5. TEST METHODS AND PROCEDURES

(a) Reference methods in Appendix A of 40 CFR 60 except as provided for in Regulation 1.04 shall be used to determine compliance with the standard prescribed in section 3 of this regulation as follows:

(i) Method 13A or 13B for the concentration of total fluorides and the associated moisture content,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(c) On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, an owner or operator subject to the provisions of this regulation shall not cause to be discharged into the atmosphere from any coal processing and/or conveying equipment, coal storage system, or coal transfer and/or loading system processing coal gases which exhibit 20 percent opacity or greater.

SECTION 4. MONITORING OF OPERATIONS

(a) The owner or operator of any thermal dryer shall install, calibrate, maintain, and continuously operate monitoring devices as follows:

(i) A monitoring device for the measurement of the temperature of the gas stream at the exit of the thermal dryer on a continuous basis. The monitoring device is to be certified by the manufacturer to be accurate within ± 3° Fahrenheit.

(ii) For affected facilities that use venturi scrubber emission control equipment:

a. A monitoring device for the continuous measurement of the pressure loss through the venturi construction of the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± 1 inch water gauge.

b. A monitoring device for the continuous measurement of the water supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± 5 percent of design water supply pressure. The pressure sensor or tap must be located close to the water discharge point. The District may be consulted for approval of alternative locations.

(b) All monitoring devices under paragraph (a) of this section are to be recalibrated annually in accordance with procedures under paragraph (b) of section 6 of Regulation 1.

SECTION 5. TEST METHODS AND PROCEDURES

(a) The reference methods in Appendix A of 40 CFR 60, except as provided in Regulation 1.04 and in section 3 of this regulation, are to be used to determine compliance with the standards prescribed in section 3 of this regulation as follows:

(i) Method 5 for the concentration of particulate matter and associated moisture content;

(ii) Method 1 for sample and velocity traverses;

(iii) Method 2 for velocity and volumetric flow rate;

(iv) Method 3 for gas analysis; and

(v) Method 9 for visible emissions.

(b) For Method 5, the sampling time for each run is at least 60 minutes, and the minimum sample volume is 0.85 dscm (30 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the District. Sampling is not to be started until 30 minutes after startup and is to be terminated before shutdown procedures commence. The owner or operator of the affected facility shall eliminate cyclonic flow during performance tests in a manner acceptable to the District.

(c) The owner or operator shall construct the facility so that particulate emissions from thermal dryers or pneumatic coal cleaning equipment can be accurately determined by applicable test methods and procedures under subsection (a) of this section.

REGULATION 7.46 STANDARD OF PERFORMANCE FOR NEW COAL PREPARATION PLANTS

SECTION 1. APPLICABILITY

The provisions of this regulation are applicable to any of the following affected facilities in coal preparation plants which process more than 200 tons per day: thermal dryers, pneumatic coal-cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems, commenced on or after the classification date defined below.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Coal preparation plant" means any facility (excluding underground mining operations) which prepares coal by one or more of the following processes: breaking, crushing, screening, wet or dry cleaning, and thermal drying.

(b) "Classification date" means October 24, 1974.

(c) "Bituminous coal" means solid fossil fuel classified as bituminous coal by A.S.T.M. Designation D-388-66(72).

(d) "Coal" means all solid fossil fuels classified as anthracite, bituminous, subbituminous, or lignite by A.S.T.M. Designation D-388-66(72).

(e) "Cyclonic flow" means a spiraling movement of exhaust gases within a duct or stack.

(f) "Thermal dryer" means any facility in which the moisture content of bituminous coal is reduced by contact with a heated gas stream which is exhausted to the atmosphere.

(g) "Pneumatic coal-cleaning equipment" means any facility which classifies bituminous coal by size or separates bituminous coal from refuse by application of air stream(s).

(h) "Coal processing and conveying equipment" means any machinery used to reduce the size of coal or to separate coal from refuse, and the equipment used to convey coal to or remove coal and refuse from the machinery. This includes, but is not limited to, breakers, crushers, screens, and conveyor belts.

(i) "Coal storage system" means any facility used to store coal including open storage piles.

(j) "Transfer and loading system" means any facility used to transfer and load coal for shipment.

SECTION 3. STANDARDS FOR PARTICULATE MATTER

(a) On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, an owner or operator subject to the provisions of this regulation shall not cause to be discharged into the atmosphere from any thermal dryer gases which:

(i) Contain particulate matter in excess of 0.070 g/dscm (0.031 gr/dscf).

(ii) Exhibit 20 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, an owner or operator subject to the provisions of this regulation shall not cause to be discharged into the atmosphere from any pneumatic coal cleaning equipment gases which:

(i) Contain particulate matter in excess of 0.040 g/dscm (0.018 gr/dscf).

(ii) Exhibit 10 percent opacity or greater.

(s) "Charge chrome" means that alloy containing 52 to 70 percent by weight chromium, 5 to 8 percent by weight carbon, and 3 to 6 percent by weight silicon.

(t) "Silvery iron" means any ferrosilicon, as defined by A.S.T.M. designation A-100-69(74), which contains less than 30 percent silicon.

(u) "Ferrochrome silicon" means the alloy as defined by A.S.T.M. designation A-482-66(71).

(v) "Silicomanganese zirconium" means that alloy containing 60 to 65 percent by weight silicon, 1.5 to 2.5 percent by weight calcium, 5 to 7 percent by weight zirconium, 0.75 to 1.25 percent by weight aluminum, 5 to 7 percent by weight manganese, and 2 to 3 percent by weight barium.

(w) "Calcium silicon" means that alloy as defined by A.S.T.M. designation A-495-74(70).

(x) "Ferrosilicon" means that alloy as defined by A.S.T.M. designation A-100-69 grades A, B, C, D, and E which contains 50 or more percent by weight silicon.

(y) "Silicon metal" means any silicon alloy containing more than 96 percent silicon by weight.

(z) "Ferromanganese silicon" means that alloy containing 63 to 66 percent by weight manganese, 28 to 32 percent by weight silicon, and a maximum of 0.08 percent by weight carbon.

(aa) "Concentrated discharge" means that the outlet from a control device consists of either stacks (one or more) or openings on the device's top or side which has (have) a total area less than 5 percent of the corresponding top or side and which has (have) a length of not more than twice the width.

(bb) "Dispersed discharge" means that the outlet from a control device consists of opening(s) on the device"s top or side which has (have) a total area exceeding 5 percent of the corresponding top or side or which have a length more than twice the width. A control device may have both dispersed and concentrated discharges.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) On and after the date on which theperformance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any electric submerged arc furnace any gases which:

(i) Exit from a control device and contain particulate matter in excess of:

a. 0.45 kg/MW-hr (0.99 lb/MW-hr) while silicon metal, ferrosilicon, calcium silicon, or silicomanganese zirconium is being produced.

b. 0.23 kg/MW-hr (0.51 lb/MW-hr) while high-carbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, calcium carbide, ferrochrome silicon, ferromanganese silicon, or silvery iron is being produced.

(ii) Exit from a control device and exhibit an opacity equal to or greater than:

a. Three percent where control device has dispersed discharge.

b. Fifteen percent for all other control devices.

Exit from an electric submerged arc furnace and escape the capture system and are visible without the aid of instruments. The requirements under this paragraph apply only during periods when flow rates are being established under subsection (4) of section 6 of this regulation;

(iii) Escape the capture system at the tapping station and are visible without the aid of instruments for more than 40 percent of each tapping period. There are no limitations on visible emissions under this paragraph when a blowing tap occurs. The requirements under this paragraph apply only during periods when flow rates are being established under paragraph (4) of section 6 of this regulation.

REGULATION 7.47. STANDARD OF PERFORMANCE FOR NEW FERROLLOY PRODUCTION FACILITIES

SECTION 1. APPLICABILITY

The provisions of this regulation are applicable to the following affected facilities commenced on or after the classification date defined below: electric submerged arc furnaces which produce silicon metal, ferrosilicon, calcium silicon, silicomanganese zirconium, ferrochrome silicon, silvery iron, high-carbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, ferromanganese silicon, or calcium carbide; and dust-handling equipment.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shabl have the meaning given them in Regulation 1.02.

(a) "Electric submerged arc furnace" means any furnace wherein electrical energy is converted to heat energy by transmission of current between electrodes partially submerged in the furnace charge.

(b) "Furnace charge" means any material introduced into the electric submerged arc furnace and may consist of, but is not limited to, ores, slag, carbonaceous material, and limestone.

(c) "Product change" means any change in the composition of the furnace charge that would cause the electric submerged arc furnace to become subject to a different mass standard applicable under this regulation.

(d) "Slag" means the more or less completely fused and vitrified matter separated during the reduction of metal from its ore.

(e) "Tapping" means the removal of slag or product from the electric submerged arc furnace under normal operating conditions such as removal of metal under normal pressure and movement by gravity down the spout into the ladle.

(f) "Tapping period" means the time duration from initiation of the process of opening the tap hole until plugging of the tap hole is complete.

(g) "Furnace cycle" means the time period from completion of a furnace product tap to the completion of the next consecutive product tap.

(h) "Tapping station" means that general area where molten product or slag is removed from the electric submerged arc furnace.

(i) "Blowing tap" means any tap in which an evolution of gas forces, or projects, jets of flame or metal sparks beyond the ladle, runner or collection hood.

(j) "Furnace power input" means the resistive electrical power consumption of an electric submerged arc furnace as measured in kilowatts.

(k) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the air pollution control device (and located at or near such device) serving any electric submerged arc furnace subject to this regulation.

(l) "Control device" means the air pollution control equipment used to remove particulate matter generated by an electric submerged arc furnace from an effluent gas stream.

(m) "Classification date" means October 21, 1974.

(n) "Capture system" means the equipment (including hoods, ducts, fans, dampers, etc.) used to capture or transport particulate matter generated by an affected electric submerged arc furnace to the control device.

(o) "Standard ferromanganese" means that alloy as defined by A.S.T.M. designation A-99-66(71).

(p) "Silicomanganese" means that alloy as defined by A.S.T.M. designation A-483-64(74).

(q) "Calcium carbide" means material containing 70 to 85 percent calcium carbide by weight.

(r) "High-carbon ferrochrome" means that alloy as defined by A.S.T.M. designation A-101-73 grades HC1 through HC6.

regulation, volumetric flow rate through each separately ducted hood of the capture system must be determined using the monitoring device required under paragraph (c) of this section. The volumetric flow rates must be determined for furnace power input levels at 50 and 100 percent of the nominal rated capacity of the electric submerged arc furnace. At all times the electric submerged arc furnace is operated, the owner or operator shall maintain the volumetric flow rate at or above the appropriate levels for that furnace power input level determined during the most recent performance test. If emissions due to tapping are captured and ducted separately from emissions of the electric submerged arc furnace, during each tapping period the owner or operator shall maintain the exhaust flow rates through the capture system over the tapping station at or above the levels established during the most recent performance test. Operation at lower flow rates may be considered by the District to be unacceptable operation and maintenance of the affected facility. The owner or operator may request that these flow rates be re-established by conducting new performance tests under section 4 of Regulation 7.01.

(e) The owner or operator may as an alternative to subparagraph (c) of this section determine the volumetric flow rate through each fan of the capture system from the fan power consumption, pressure drop across the fan and the fan performance curve. Only data specific to the operation of the affected electric submerged arc furnace are acceptable for demonstration of compliance with the requirements of this section. The owner or operator shall maintain on file a permanent record of the fan performance curve (prepared for a specific temperature) and shall:

(i) Install, calibrate, maintain, and operate a device to continuously measure and record the power consumption of the fan motor (measured in kilowatts), and,

(ii) Maintain and operate a device to continuously measure and record the pressure drop across the fan. The fan power consumption and pressure drop measurements must be synchronized to allow real time comparisons of the data. The monitoring devices must have an accuracy of ± 5 percent over their normal operating ranges.

(f) The volumetric flow rate through each fan of the capture system must be determined from the fan power consumption, fan pressure drop, and fan performance curve specified under paragraph (e) of this section, during any performance test required under section 4 of Regulation 7.01 to demonstrate compliance with the standards under subparagraphs (iii) and (iv) of paragraph (a) of section 3 of this regulation. The owner or operator shall determine the volumetric flow rate at a representative temperature for furnace power input levels of 50 and 100 percent of the nominal rated capacity of the electric submerged arc furnace. At all times the electric submerged arc furnace is operated, the owner or operator shall maintain the fan power consumption and fan pressure drop at levels such that the volumetric flow rate is at or above the levels established during the most recent performance test for that furnace power input level. If emissions due to tapping are captured and ducted separately from the emissions of the electric submerged arc furnace, during each tapping period the owner or operator shall maintain the fan power consumption and fan pressure drop at levels such that the volumetric flow rate is at or above the levels established during the most recent performance test. Operation at lower flow rates may be considered by the District to be unacceptable operation and maintenance of the affected facility. The owner or operator may request that these flow rates be re-established by conducting new performance tests under section 4 of Regulation 7.01. The District may require the owner or operator to verify the fan performance curve by monitoring necessary fan operating parameters and determining the gas volume moved relative to Methods 1 and 2 of Appendix A to 40 CFR 60.

(g) All monitoring devices required under paragraph (c) and (e) of this section are to be checked for calibration annually in accordance with the procedures under paragraph (b) of section 6 of Regulation 1.

SECTION 7. TEST METHODS AND PROCEDURES

(a) Reference methods in Appendix A of 40 CFR 60, except as provided in Regulation 1.04, shall be used to determine compliance with the standards prescribed in sections 3 and 4 of this regulation as follows:

(i) Method 5 for the concentration of particulate matter and the associated moisture content except that the heating systems specified in paragraphs 2.1.2 and 2.1.4 of Method 5 are not to be used when the carbon monoxide content of the gas stream exceeds 10 percent by volume, dry basis;

(b) On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any dust-handling equipment any gases which exhibit 10 percent opacity or greater.

SECTION 4. STANDARD FOR CARBON MONOXIDE

On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any electric submerged arc furnace any gases which contain, on a dry basis, 20 or greater volume percent of carbon monoxide. Combustion of such gases under conditions acceptable to the District constitutes compliance with this section. Acceptable conditions include, but are not limited to, flaring of gases or use of gases as fuel for other processes.

SECTION 5. EMISSION MONITORING

(a) The owner or operator subject to the provisions of this regulation shall install, calibrate, maintain and operate a continuous monitoring system for measurement of the opacity of emissions discharged into the atmosphere from the control device(s) with a concentrated discharge.

(b) For the purpose of reports required under section 5 of Regulation 7.01, the owner or operator shall report as excess emissions all 6 minute periods in which the average opacity is 15 percent or greater.

(c) The owner or operator subject to the provisions of this regulation shall submit a written report of any product change to the District. Reports of product changes must be postmarked not later than 30 days after implementation of the product change.

SECTION 6. MONITORING OF OPERATIONS

(a) The owner or operator of any electric submerged arc furnace subject to the provisions of this regulation shall maintain daily records of the following information:

(i) Product being produced;

(ii) Description of constituents of furnace charge, including the quantity, by weight;

(iii) Time and duration of each tapping period and the identification of material tapped (slag or product);

(iv) All furnace power input data obtained under subsection (b) of this section.

(v) All flow rate data obtained under paragraph (c) of this section or all fan motor power consumption and pressure drop data obtained under paragraph (e) of this section.

(b) The owner or operator subject to the provisions of this regulation shall install, calibrate, maintain and operate a device to measure and continuously record the furnace power input. The furnace power input may be measured at the output or input side of the transformer. The device must have an accuracy of ± five (5) percent over its operating range.

(c) The owner or operator subject to the provisions of this regulation shall install, calibrate, and maintain a monitoring device that continuously measures and records the volumetric flow rate through each separately ducted hood of the capture system, except as provided under paragraph (e) of this ection. The owner or operator of an electric submerged arc furnace that is equipped with a water cooled cover which is designed to contain and prevent escape of the generated gas and particulate matter shall monitor only the volumetric flow rate through the capture system for control of emissions from the tapping station. The owner or operator may install the monitoring device(s) in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device must have an accuracy of ± ten (10) percent over its normal operating range and must be calibrated according to the manufacturer's instructions. The District may require the owner or operator to demonstrate the accuracy of the monitoring device relative to Methods 1 and 2 of Appendix A to 40 CFR 60.

(d) When performance tests are conducted under the provisions of section 5 of Regulation 7.01 to demonstrate compliance with the standards under subparagraphs (iii) and (iv) of paragraph (a) of section 3 of this

APPENDIX A TO REGULATION 7.47

DETERMINATION OF PARTICULATE MATTER EMISSIONS

$$En = C\,Q$$

Where:

En = Emissions of particulate matter in kg/hr (lb/hr).

C = Concentration of particualte matter in kg/dscm (lb/dscf) as determined by Method 5.

Q = Volumetric flow rate of the effluent gas stream in dscm/hr (dscf/hr) as determined by Method 2.

APPENDIX B TO REGULATION 7.47

DETERMINATION OF PARTICULATE MATTER EMISSIONS FOR METHOD 5

$$E = \frac{\sum_{n=1}^{n} En}{P}$$

Where:

E = Emissions of particulate from the affected facility in kg/MW-hr (lb/MW-hr).

n = Total number of exhaust streams at which emissions are quantified.

En = Emission of particulate matter from each exhaust stream in kg/hr (lb/hr), as determined in paragraph (g) of section 7 of this regulation

P = Average furnace power input during the sampling period, in megawatts as determined according to paragraph (b) of section 6 of this regulation.

(ii) Method 1 for sample and velocity flow rate;

(iii) Method 2 for velocity and volumetric flow rate;

(iv) Method 3 for gas analysis, including carbon monoxide; and,

(v) Method 9 for opacity determination.

(b) For Method 5, the sampling time for each run is to include an integral number of furnace cycles. The sampling time for each run must be at least 60 minutes and the minimum sample volume must be 1.8 dscm (64 dscf) when sampling emissions from open electric submerged arc furnaces with wet scrubber control devices, sealed electric submerged furnaces, or semi-enclosed electric submerged arc furnaces. When sampling emissions from other types of installations, the sampling time for each run must be at least 200 minutes and the minimum sample volume must be 5.7 dscm (200 dscf). Shorter sampling times or smaller sampling volumes, when necessitated by process variables or other factors, may be approved by the District.

(c) During the performance test, the owner or operator shall record the maximum open hood area (in hoods with segmented or otherwise moveable sides) under which the process is expected to be operated and remain in compliance wiht all standards. Any future operation of the hooding system with open areas in excess of the maximum is not permitted.

(d) The owner or operator shall construct the control device so that volumetric flow rates and particulate matter emissions can be accurately determined by applicable test methods and procedures.

(e) During any performance test required under section 4 of Regulation 7.01 the owner or operator shall not allow gaseous diluents to be added to the effluent gas stream after the fabric in an open pressurized fabric filter collector unless the total gas volume flow from the collector is accurately determined and considered in the determination of emissions.

(f) When compliance with section 4 of this regulation is to be attained by combusting the gas stream in a flare, the location of the sampling site for particulate matter is to be upstream of the flare.

(g) For each run, particulate matter emissions, expressed in kg/hr (lb/hr), must be determined for each exhaust stream at which emissions are quantified using the equation given in Appendix A to this regulation.

(h) For Method 5, particulate matter emissions from the affected facility, expressed in kg/MW-hr) must be determined for each run using the equation given in Appendix B to this regulation.

(p) "Concentrated discharge" means that the outlet from a control device consists of either stacks (one or more) or openings on the device's top or side which has (have) a total area less than 5 percent of the corresponding top or side and which has (have) a length of not more than twice the width.

(q) "Dispersed discharge" means that the outlet from a control device consists of opening(s) on the device's top or side which has (have) a total area exceeding 5 percent of the corresponding top or side which have a length more than twice the width.

(r) "Classification date" means October 21, 1974.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) On and after the date on which the performance test required to be conducted by section 4 of Regulation 7.01 is completed, no owner or or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from an electric arc furnace and associated with metallurgical equipment any gases which:

(i) Exit from a control device and contain particulate matter in excess of 0.0052 grains/dscf (12 mg/dscm);

(ii) Exit from a control device and exhibit 3 percent opacity or greater;

(iii) Exit from a shop and, due solely to operations of any EAF(s), exhibit greater than zero percent shop opacity except:

a. Shop opacity greater than zero percent, but less than 20 percent, may occur during charging period.

b. Shop opacity greater than zero percent, but less than 40 percent, may occur during tapping periods.

c. Where the capture system is operated such that the roof of the shop is closed during the charge and the tap, and emissions to the atmosphere are prevented until the roof is opened after completion of the charge or tap, the shop opacity standards under subparagraph (iii) of this section shall apply when the roof is opened and shall continue to apply for the length of time defined by the charging and/or tapping periods.

(b) Opacity standards under paragraph (a) (iii) of this section shall apply only during periods when flow rates and pressure are being established under section 5 (c) and (f).

(c) On and after the date on which the performance test required to be conducted by subsection 4 of Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from dust-handling equipment any gases which exhibit 10 percent opacity or greater.

SECTION 4. EMISSION MONITORING

(a) A continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) with a concentrated discharge shall be installed, calibrated, maintained and operated by the owner or operator subject to the provisions of this regulation.

(b) For the purpose of reports under section 5 of Regulation 7.01, periods of excess emissions that shall be reported are defined as all 6 minute periods during which the average opacity is 3 percent or greater.

SECTION 5. MONITORING OF OPERATIONS

(a) The owner or operator subject to the provisions of this regulation shall maintain records daily of the following information:

(i) Time and duration of each charge;

(ii) Time and duration of each tap;

(iii) All flow rate data obtained under paragraph (b) of this section, or equivalent obtained under paragraph (d) of this section; and

(iv) All pressure data obtained under paragraph (e) of this section.

REGULATION 7.48 STANDARD OF PERFORMANCE FOR STEEL PLANTS AND FOUNDRIES USING NEW ELECTRIC ARC FURNACES

SECTION 1. APPLICABILITY

The provisions of this regulation apply to the following affected facilities in steel plants and foundries commenced on or after the classification date defined below: electric arc furnaces and/or associated metallurgical equipment located in the same shop as well as associated dust handling equipment.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Electric arc furnace (EAF)" means any furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. Furnaces from which the molten steel is cast into the shape of finished products, such as in a foundry, are affected facilities included within the scope of this definition. Furnaces which, as the primary source of iron, continuously feed pre-reduced ore pellets are not affected facilities within the scope of this definition.

(b) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the control device and located at or near the control device for an EAF subject to this regulation.

(c) "Control device" means the air pollution control equipment used to remove particulate matter generated by an EAF(s) from the effluent gas stream.

(d) "Capture system" means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by EAF and associated metallurgical equipment to the air pollution control device.

(e) "Associated metallurgical equipment" in the shop includes but is not limited to scrap pre-heaters and degreasers, and equipment for hot metal transfer, charging, lancing, boiling, slagging, and de-slagging tapping, innoculating, teeming, hot-topping, vacuum de-gassing, continuous casting, etc.

(f) "Charge" means the addition of iron and steel scrap or other materials into the top of an electric arc furnace.

(g) "Charging period" means the time period commencing at the monent an EAF starts to open and ending either 3 minutes after the EAF roof is returned to its closed position or 6 minutes after commencement of opening of the roof, whichever is longer.

(h) "Tap" means the pouring of molten steel from an EAF.

(i) "Tapping period" means the time period commencing at the moment an EAF begins to tilt to pour and ending either 3 minutes after an EAF returns to an upright position or 6 minutes after commencing to tilt, whichever is longer.

(j) "Meltdown and refining" means the phase of the steel production cycle when charge material is melted and undesirable elements are removed from the metal.

(k) "Meltdown ahd refining period" means the time period commencing at the termination of the initial charging period and ending at the initiation of the tapping period, excluding any intermediate charging period.

(l) "Shop opacity" means the arithmetic average of 24 or more opacity observations of emissions from the shop taken in accordance with Method 9 of Appendix A of 40 CFR 60 for the applicable time periods.

(m) "Heat time" means the period commencing when scrap is charged to an empty EAF and terminating when the EAF tap is completed.

(n) "Shop" means the building which houses one or more EAF's.

(o) "Direct shell evacuation system" means any system that maintains a negative pressure within the EAF above the slag or metal and ducts these emissions to the control device.

(v) Method 9 for opacity determination.

(b) For Method 5, the sampling time for each run shall be at least 4 hours. When a single EAF is sampled, the sampling time for each run shall also include an integral number of heats. Shorter sampling times, when necessitated by process variables or other factors, may be approved by the District. The minimum sample volume shall be 4.5 dscm (160 dscf).

(c) For the purpose of this regulation, the owner or operator shall conduct the demonstration of compliance with subparagraph (iii) of paragraph (a) of section 3 and furnish the District a written report of the results of the test.

(d) During any performance test required under section 4 of Regulation 7.01, no gaseous diluents may be added to the effluent gas stream after the fabric in any pressurized fabric filter collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(e) When more than one control device serves the EAF(s) being tested, the concentration of particulate matter shall be determined using the equation given in Appendix A of this regulation.

(f) Any control device subject to the provisions of this regulation shall be designed and constructed to allow measurement of volumetric flow rate and emissions using applicable test methods and procedures.

(g) Where emissions from any EAF(s) are combined with emissions from other affected facilities in the same shop and controlled by a common capture system and control device, the owner or operator may use any of the following procedures during a performance test:

(i) Base compliance on control of the combined emissions;

(ii) Utilize a method acceptable to the District which compensates for the emissions from the other affected facilities; and

(iii) Any combination of the criteria of subparagraphs (i) and (ii) of this subsection.

APPENDIX A TO REGULATION 7.48

DETERMINATION OF CONCENTRATION OF PARTICULATE MATTER

$$C = \frac{\sum_{n=1}^{N} (C\ Q)_n}{\sum_{n=1}^{N} (Q)}$$

Where:

C = concentration of particulate matter in mg/dscm (gr/dscf) as determined by Method 5

N = total number of control devices tested

Q = volumetric flow rate of the effluent gas stream in mg/dscm (dscf/hr) as determined by Method 2

$C\ Q_n$ or Q_n = value of the applicable parameter for each control device tested (n).

(b) Except as provided under paragraph (d) of this section, the owner or operator subject to the provisions of this regulation shall install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of ± 10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The District may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of Appendix A of 40 CFR 60.

(c) When the owner or operator of an EAF is required to demonstrate compliance with the standard under subparagraph (iii) of paragraph (a) of section 3 and at any other time the District may require, the volumetric flow rate through each separately ducted hood shall be determined during all periods in which the hood is operated for the purpose of capturing emissions from the EAF using the monitoring device under paragraph (b) of this section. The owner or operator may petition the District for re-establishment of these flow rates whenever the owner or operator can demonstrate to the District's satisfaction that the EAF operating conditions upon which the flow rates were previously established are no longer applicable. The flow rates determined during the most recent demonstration of compliance shall be maintained (or may be exceeded) at the appropriate level for each applicable period. Operation at lower flow rates may be considered by the District to be unacceptable operation and maintenance of the affected facility.

(d) The owner or operator may petition the District to approve any alternative method that will provide a continuous record of operation of each emission capture system.

(e) Where emissions during any phase of the heat time are controlled by use of a direct shell evacuation system, the owner or operator shall install, calibrate and maintain a monitoring device that continuously records the pressure in the free space inside the EAF. The pressure shall be recorded as 15 minute integrated averages. The monitoring device may be installed in any appropriate location in the EAF such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ± 5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

(f) When the owner or operator of an EAF is required to demonstrate compliance with the standard under subparagraph (iii) of paragraph (a) of section 3 and at any other time the District may require, the pressure in the free space inside the furnace shall be determined during the meltdown and refining period(s) using the monitoring device under paragraph (e) of this section. The owner or operator may petition the District for re-establishment of the 15 minute integrated average pressure whenever the owner or operator can demonstrate to the District's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times the EAF is operating in a meltdown and refining period. Operation at higher pressure may be considered by the District to be unacceptable operation and maintenance of the affected facility.

(g) Where the capture system is designed and operated such that all emissions are captured and ducted to a control device, the owner or operator shall not be subject to the requirements of this section.

(h) Where each EAF in a shop has an actual tapping capacity of less than 10 tons, the owner or operator shall not be subject to the requirements of this section.

SECTION 6. TEST METHODS AND PROCEDURES

(a) Reference methods in Appendix A of 40 CFR 60, except as provided for in Regulation 1.04 shall be used to determine compliance with this regulation as follows:

(i) Method 5 for concentration of particulate matter and associated moisture content;

(ii) Method 1 for sample and velocity traverses;

(iii) Method 2 for velocity and volumetric flow rate;

(iv) Method 3 for gas analysis; and

(i) Any gases which exhibit greater than zero percent opacity from any:

a. Column dryer with column plate perforations exceeding 2.4 mm diameter (.094 inch)

b. Rack dryer in which exhaust gases pass through a screen filter coarser than 50 mesh

(ii) Any fugitive emission from:

a. Any individual truck unloading station, railcar unloading station, or railcar loading station, which exhibits greater than 5 percent opacity

b. Any grain handling operation which exhibits greater than zero percent opacity

c. Any truck loading station which exhibits greater than 10 percent opacity.

d. Any barge of ship loading station which exhibits greater than 20 percent opacity

(b) On and after the date on which the performance test required by regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility (except a grain dryer) any process emission which:

(i) Contains particulate matter in excess of 0.023 g/dscm (0.01 gr/dscf)

(ii) Exhibits greater than zero percent opacity.

(c) The owner or operator of any barge or ship unloading station shall operate as follows:

(i) The unloading leg shall be enclosed from the top (including the receiving hopper) to the center line of the bottom pulley, and ventilation to a control device shall be maintained on both sides of the leg and the grain receiving hopper.

(ii) The total rate of air ventilated shall be at least 32.1 actual cubic meters per cubic meter of grain handling capacity (40 cubic ft. per bushel).

(iii) Rather than comply with the requirements of subparagraphs (i) and (ii) of this paragraph, the owner or operator may use other methods of emission control if it is demonstrated to the District's satisfaction that the control would reduce particulate emissions to the same level or less.

SECTION 4. TEST METHODS AND PROCEDURES

(a) Reference methods in appendix A of 40 CFR 60, except as provided for in Regulation 1.04, shall be used to determine compliance with the standards as prescribed in section 3 as follows:

(i) Method 5 or Method 17 for concentration of particulate matter and associated moisture content

(ii) Method 1 for sample and velocity traverses

(iii) Method 2 for velocity and volumetric flow rates

(iv) Method 3 for gas analysis

(v) Method 9 for visible emissions

(b) For Method 5 the sampling probe and filter holder shall be operated without heaters. The sampling time for each run shall be at least 60 minutes. The minimum sample volume shall be 1.7 dscm (60 dscf).

SECTION 5. MODIFICATIONS

The following physical changes, or changes in the method of operation, shall not be themselves be considered a modification of any existing facility:

(a) The addition of gravity loadout spouts to existing grain storage or grain transfer bins

REGULATION 7.49. STANDARD OF PERFORMANCE FOR NEW GRAIN ELEVATORS

SECTION 1. APPLICABILITY

The provisions of this regulation apply to each affected facility at any grain elevator, or any grain storage elevator, except as provided under section 5. The affected facilities are each truck unloading station, truck loading station, barge and ship unloading station, barge and ship loading station, railcar unloading station, railcar loading station, grain dryer, and all grain handling operations, which commence construction, modification or reconstruction on or after August 3, 1978.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Grain" means corn, wheat, sorghum, rice, rye, oats, barley or soybeans.

(b) "Grain elevator" means any plant or installation at which grain is unloaded, handled, cleaned, dried, stored, loaded.

(c) "Grain terminal elevator" means any grain elevator which has a storage capacity of more than 88,100 cubic meters (2.5 million bushels) except those located at manufacturers of cereals, animal or pet foods, breweries, and livestock feedlots.

(d) "Permanent storage capacity" means grain storage capacity which is inside a building, bin, or silo.

(e) "Railcar" means railroad hopper car or boxcar.

(f) "Grain storage elevator" means any grain elevator at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant which has a permanent grain storage capacity of 32,500 cubic meters (1 million bushels).

(g) "Process emission" means the particulate matter which is collected by a capture system.

(h) "Fugitive emission" means the particulate matter which is not collected by the capture system and is released directly into the atmosphere from an affected facility at a grain elevator.

(i) "Capture system" means the equipment such as sheds, hoods, ducts, fans, dampers, etc. used to collect particulate matter which is generated by an affected facility at a grain elevator.

(j) "Grain unloading station" means that portion of a grain elevator where the grain is transferred from a truck, railcar, barge or ship to a receiving hopper.

(k) "Grain loading station" means that portion of a grain elevator where grain is transferred from the elevator to a truck, railcar, barge, or ship.

(l) "Grain handling operations" include bucket elevators or legs (excluding legs used to unload barges or ships), scale hoppers and surge bins (garners), turn heads, scalpers, cleaners, trippers, and the headhouse and other structures.

(m) "Column dryer" means any equipment used to reduce the moisture content of grain in which the grain flows from the top to the bottom in one or more continuous packed columns between two perforated metal sheets.

(n) "Rack dryer" means any equipment used to reduce moisture content of grain in which grain flows from the top to the bottom in a cascading flow around rows of baffles (racks).

(o) "Unloading leg" means a device which includes a bucket-type elevator which is used to remove grain from a barge or ship.

SECTION 3. STANDARD FOR PARTICULATE MATTER

(a) On and after the date on which the performance test required by regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere:

(b) The installation of automatic grain weighing scales

(c) Replacement of motor and drive units propelling existing grain handling equipment

(d) The installation of permanent storage capacity with no increase in hourly grain handling capacity.

(d) For the purpose of conducting a performance test under Regulation 1.04 the owner or operator of any lime manufacturing plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate a device for measuring the mass rate of limestone feed to any affected rotary lime kiln and the mass rate of lime feed to any affected lime hydrator. The measuring device must be accurate to within ±5 percent of the mass rate over its operating range.

(e) For purpose of reports required, periods of excess emissions that shall be reported are defined as six minute periods during which the average opacity of the plume from any lime kiln, subject to subsection (a) of this section is 10 percent or greater.

SECTION 5. TEST METHODS AND PROCEDURES

(a) Reference methods in Appendix A of 40 CFR 60, except as provided under Regulation 1.04, shall be used to determine compliance with section 3 as follows:

(i) Method 5 for the measurement of particulate matter

(ii) Method 1 for sample and velocity traverses.

(iii) Method 2 for velocity and volumetric flow rates.

(iv) Method 3 for gas analysis.

(v) Method 4 for stack gas moisture and

(vi) Method 5 for visible emissions.

(b) For method 5, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.85 std. cubic meters per hour,dry basis (0.53 dscf/min.) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the agency.

(c) Because of the high moisture content (40 to 85 percent by volume) of the exhaust gases from hydrators, the Method 5 sample train may be modified to include a nozzle when testing lime hydrators. In this configuration, the sampling rate necessary for maintaining isokinetic conditions can be directly related to exhaust gas velocity without a correction for moisture content. With the orifice in this position, extra care should be exercised when cleaning the sampling train.

REGULATION 7.50. STANDARD OF PERFORMANCE FOR NEW LIME MANUFACTURING PLANTS

SECTION 1. APPLICABILITY

(a) The provisions of this regulation are applicable to rotary lime kilns and lime hydrators which are the affected facilities, and which commence construction or modification after May 3, 1977.

(b) The provisions of this regulation do not apply to facilities used in the manufacture of lime at kraft paper mills.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Lime manufacturing plant" includes any plant which produces a lime product from limestone by calcination. Hydration of the lime product is also considered to be part of the source.

(b) "Lime product" means the product of the calcination process including, but not limited to, calcitic lime, dolomitic lime and dead-burned dolomite.

(c) "Rotary lime kiln" means a unit with an inclined rotating drum which is used to produce a lime product from limestone by calcination.

(d) "Lime hydrator" means a unit used to produced hydrated lime product.

SECTION 3. STANDARD FOR PARTICULATE MATTER

On and after the date on which the performance test required by Regulation 7.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere:

(a) From any rotary lime kiln any gases which:

(i) Contain particulate matter in excess of 0.15 kilogram per meagagram of limestone feed (0.30 lbs/ton).

(ii) Exhibit 10 percent opacity or greater.

(b) From any lime hydrator any gases which contain particulate matter in excess of 0.075 kilogram per megagram of lime feed (0.15 lbs/ton).

SECTION 4. MONITORING OF EMISSIONS AND OPERATIONS

(a) The owner or operator subject to the provisions of this regulation shall install, calibrate, maintain, and operate a continuous monitoring system, except as provided in paragraph (b) of this section, to monitor and record the opacity of a representative portion of the gases discharged into the atmosphere from any rotary kiln. The span of this system shall be set at 40 percent opacity.

(b) The owner or operator of any rotary lime kiln using a wet scrubbing emission control device subject to the provisions of this regulation, shall not be required to monitor the opacity of the gases discharged as required in paragraph (a) of this section, but shall install, calibrate, maintain, and operate the following continuous monitoring devices:

(i) A monitoring device for continuous measurement of pressure loss of gas stream through the scrubber. The monitoring device must be accurate within ±250 pasals (one inch of water).

(ii) A monitoring device for the continuous measurement of the scrubbing liquid's supply pressure to the control device. The monitoring device must be accurate within ±5 percent of design scrubbing liquid supply pressure.

(c) The owner or operator of any lime hydrator, using a wet scrubbing emission control device subject to the provisions of this regulation, shall install, calibrate, maintain, and operate the following continuous monitoring devices:

(i) A monitoring device for the continuous measuring of the scrubbing liquid's flow rate. The monitoring device must be accurate within ±5 percent of design scrubbing liquid's flow rate.

(ii) A monitoring device for the continuous measurement of the electric current, in amperes, used by the scrubber. The monitoring device must be accurate within ±10 percent over its normal operating range.

(f) The incinerator shall be equipped with a fail-safe device designed to interrupt the delivery of liquid waste to the burner in the event of

  (i) Fire or flame reaching the line delivering waste to the burner, or

  (ii) Loss of burner flame.

(g) The delivery pipe to the liquid waste burner shall be equipped with a flow indicator capable of measuring the maximum demand of the burner.

(h) The incinerator shall be equipped with an indicating pyrometer or thermometer to measure the exit gas temperature.

SECTION 5. RECORDKEEPING

The owner or operator of any liquid waste incinerator subject to the provisions of this regulation shall record the following information:

(a) Daily operating hours of liquid waste incinerator

(b) Daily log of liquid waste received and specifying:

  (i) The amount received,

  (ii) A general description of the waste,

  (iii) The source from whom the waste was received,

  (iv) A designation of whether the waste contains material toxic to humans.

SECTION 6. TIMETABLE FOR COMPLIANCE

(a) Compliance with the provisions of section 4 of this regulation shall occur on or before February 1, 1980.

(b) Compliance with all other provisions of this regulation shall occur as of the effective date of this regulation.

REGULATION 7.51. STANDARD OF PERFORMANCE FOR NEW LIQUID WASTE INCINCERATORS

SECTION 1. APPLICABILITY

This section is applicable to those facilities disposing of waste solvents, chemicals, and other flammable material by incineration after the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

(a) "Liquid waste" means any material in a liquid form which has no commercial value other than recovery of its recyclable components or has been transferred to a facility for disposal.

(b) "Liquid waste incinerator" is a device for incineration of liquid waste.

(c) "Exit gas temperature" means the temperature of the products of combustion measured at the end of the incinerator and prior to any air pollution control device.

(d) "Residence time" means the time required for the products of combustion to travel from the liquid waste burner to the exit of the incinerator while maintaining the average gas temperature associated with the residence time.

(e) "Auxiliary fuel" means natural gas, propane, butane, distillate fuel oil or other fuel free of toxic compounds and containining not more than 0.5% incombustible particulate.

(f) "Combustible liquid waste" means any liquid waste with a heat content greater than 10,000 BTU/lb or capable of sustaining combustion in an incinerator without auxiliary fuel.

(g) "Partially combustible liquid waste" means any liquid waste with a heat content greater than 5000 BTU/lb and less than 10,000 BTU/lb requiring auxiliary fuel for sustained combustion.

(h) "Average gas temperature" is the mean temperature of the products of combustion while in the incinerator and prior to any spray chamber or air pollution control device.

SECTION 3. STANDARD FOR PARTICULATE MATTER

No owner or operator subject to the provisions of this regulation shall cause the emission of particulate matter from a liquid waste incinerator to exceed:

(a) 0.2 gr/scf corrected to 12% CO_2 excluding the contribution of carbon dioxide from auxiliary fuel, or

(b) 20% opacity

SECTION 4. EQUIPMENT STANDARDS

(a) Incineration of partially combustible liquids shall be accomplished in an incinerator equipped with means of firing sufficient auxiliary fuel to sustain combustion at temperatures as required by this regulation. No auxiliary fuel shall be required for incineration of combustible liquids unless otherwise required by the District.

(b) Incineration of liquid wastes with a viscosity of 750 SSU or greater shall be accomplished in a burner equipped with steam or air atomization.

(c) Incineration of hologenated liquid wastes shall be accomplished in an incinerator equipped with a wet scrubber.

(d) Incineration of liquid wastes containing inorganic salts shall be accomplished in an incinerator equipped with a particulate control device of sufficient efficiency to meet the emission standard specified in sections 3 (a) and 3 (b) of this regulation.

(e) The incinerator shall be capable of maintaining an average gas temperature of 1600° F with a residence time as determined by the District to provide complete combustion of the liquid waste.

(k) "Roll coating" means the application of a coating material to a substrate by means of hard rubber or steel rolls.

(l) "Rotogravure coating" means the application of a coating material to a substrate by means of a roll coating technique in which the pattern to be applied is etched on the coating roll. The coating material is picked up in these recessed areas and is transferred to the substrate.

(m) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

(n) "Printing" means the formation of words, designs and pictures, usually by a series of application rolls each with only partial coverage. It applies to flexagraphic and rotogravure processes as applied to publication and packaging printing.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS.

No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than 15 percent by weight of the volatile organic compounds net input into the affected facility.

SECTION 4. COMPLIANCE

(a) In all cases the design of any control system is subject to approval by the District.

(b) Compliance with the standard in section 3 shall be demonstrated by a material balance except in those cases where the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control device.

(c) With the prior approval of the District, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under section 5.

(d) Whenever deemed necessary, the District shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in section 5. The following methods of analyses for coatings shall be used as applicable except in those cases where the District determines that other methods would be more appropriate:

(i) ASTM D 1644-75 Method A;

(ii) ASTM D 1475-60 (74);

(iii) ASTM D 2369-73; or

(iv) Federal Standard 141 a, Method 4082.1.

SECTION 5. EXEMPTIONS

(a) Any affected facility coating fabric or paper shall be exempt from the provisions of section 3 if the volatile organic compound content of the coating is less than 0.35 kilograms per liter of coating (2.9 pounds per gallon), excluding water, delivered to the applications associated with the coating line.

(b) Any affected facility coating vinyl shall be exempt from the provisions of section 3 if the volatile organic compound content of the coating is less than 0.45 kilograms per liter of coating (3.8 pounds per gallon), exlcuding water, delivered to the applicators associated with the coating line.

REGULATION 7.52. STANDARD OF PERFORMANCE FOR NEW FABRIC, VINYL AND PAPER SURFACE COATING OPERATIONS.

SECTION 1. APPLICABILITY.

The provisions of this regulation shal apply to each affected facility commenced on or after the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given to them in Regulation 1.02.

(a) "Affected facility" means a coating line for fabric, vinyl, or paper.

(b) "Applicator"means the mechanism or device used to apply the coating including but not limited to: roll, knife, or rotogravure coater.

(c) "Flashoff area" means the space between the applicator and the oven.

(d) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any coatings containing volatile organic compounds. This shall include, but is not limited to:

(i) mixing operations;

(ii) process storage;

(iii) applicators;

(iv) drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(v) clean up operations;

(vi) leaks, spills and disposal of volatile organic compounds;

(vii) processing and handling of recovered volatile organic compounds.

(viii) For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coatingline of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line.

(ix) If any portion of the series of equipment and/or operations qualify for an exemption according to section 5, then that portion shall be considered to be a separate coating line.

(e) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one-tenth (0.1) mm of Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(f) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds, but does not mean storage tanks which are subject to Regulation 7.12.

(g) "Fabric coating" means the coating of a textile substrate to impart properties that are not initially present, such as strength, stability, water or acid repellancy, or appearance.

(h) "Vinyl coating" means the coating of vinyl coated fabric or vinyl sheets which includes decorative or protective topcoats or printing.

(i) "Paper coating" means the application of a uniform layer of material across the entire width of a web of paper, pressure sensitive tapes regardless of substrate, related web coating processes on plastic film such as typewriter ribbons, photographic film, magnetic tape, and decorative coatings on metal foil such as gift wrap and packaging, but does not include the printing of paper.

(j) "Knife coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a knife that spreads the coating evenly over the full width of the substrate.

pressure greater than one-tenth (0.1) mm of Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(m) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds, but does not mean storage tanks which are subject to Regulation 7.12.

(n) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than 15 percent by weight of the volatile organic compounds net input into the affected facility.

SECTION 4. COMPLIANCE

(a) In all cases the design of any control system is subject to approval by the District.

(b) Compliance with the standard in section 3 shall be demonstrated by a material balance except in those cases where the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of: the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control device.

(c) With the prior approval of the District, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under section 5.

(d) Whenever deemed necessary, the District shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in section 5. The following methods of analyses for coating shall be used as applicable except in those cases where the District determines that other methods would be more appropriate:

(i) ASTM D 1644-75, Method A;

(ii) ASTM D 1475-60(74);

(iii) ASTM D 2369-73; or

(iv) Federal Standard 141 a, Method 4082.1.

SECTION 5. EXEMPTIONS

Any affected facility shall be exempt from the provision of section 3 if the volatile organic compound content of the coating is:

(a) less than 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the applicators associated with the sheet basecoat (exterior and interior) and overvarnish or two-piece can exterior (basecoat and overvarnish) coating lines;

(b) less than 0.51 kilograms per liter of coating (4.2 pounds per gallon), excluding water, delivered to the applicators associated with the two and three-piece can interior body spray or two-piece can exterior end (spray or roll coat) coating lines;

(c) less than 0.66 kilograms per liter of coating (5.5 pounds per gallon), excluding water, delivered to the applicators associated with the three-piece can side-seam spray coating line;

(d) less than 0.44 kilograms per liter of coating (3.7 pounds per gallon), excluding water, delivered to the applicators associated with the end sealing compound coating line.

REGULATION 7.53 STANDARD OF PERFORMANCE FOR NEW CAN SURFACE COATING OPERATIONS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility commenced on or after the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given to them in Regulation 1.02.

(a) "Affected facility" means a coating line for cans.

(b) "Applicator" means the mechanism or device used to apply the coating including but not limited to spray or roller.

(c) "Flashoff area" means the space between the applicator and the oven.

(d) "End sealing compound" means a synthetic rubber compound which is coated onto can ends and functions as a gasket when the end is assembled on the can.

(e) "Exterior base coating" means a coating applied to the exterior of a can to provide exterior protection to the metal and background for the lithographic or printing operation.

(f) "Interior base coating" means a coating applied by roller coater or spray to the interior of a can to provide a protective lining between the can metal and product.

(g) "Interior body spray" means a coating sprayed on the interior of the can body to provide a protective film between the product and the can.

(h) "Overvarnish" means a coating applied directly over ink to reduce the coefficient of friction, to provide gloss and to protect the finish against abrasion and corrosion.

(i) "Three-piece can side-seam spray" means a coating sprayed on the exterior and interior of a welded, cemented or soldered seam to protect the exposed metal.

(j) "Two-piece can exterior end coating" means a coating applied by roller coating or spraying to the exterior end of a can to provide protection to the metal.

(k) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any coatings containing volatile organic compounds. This shall include, but is not limited to:

- (i) mixing operations;
- (ii) process storage;
- (iii) applicators;
- (iv) drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;
- (v) clean up operations;
- (vi) leaks, spills and disposal of volatile organic compounds;
- (vii) processing and handling of recovered volatile organic compounds.
- (viii) For the purposes of determining compliance with this regulation if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line.
- (ix) If any portion of the series of equipment and/or operations qualify for an exemption according to section 5, then that portion shall be considered to be a separate coating line.

(l) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor subtracted from the total for the purposes of determining volatile organic compound net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

SECTION 3. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than 15 percent by weight of the volatile organic compounds net input into the affected facility.

SECTION 4. COMPLIANCE

(a) In all cases the design of any control system is subject to approval by the District.

(b) Compliance with the standard in section 3 shall be demonstrated by a material balance except in those cases where the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of: the control system design, control device efficiency, control system capture efficiency, and any factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control device.

(c) With the prior approval of the District, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under section 5.

(d) Whenever deemed necessary, the District shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in section 5. The following methods of analyses for coatings shall be used as applicable except in those cases where the District determines that other methods would be more appropriate:

(i) ASTM D 1644-75 Method A;

(ii) ASTM D 1475-60 (74);

(iii) ASTM D 2369-73; or

(iv) Federal Standard 141 a, Method 4082.1.

SECTION 5. EXEMPTIONS

Any affected facility shall be exempt from the provisions of section 3 if the volatile organic compound content of the coating is less than 0.31 kilograms per liter of coating (2.6 pounds per gallon), excluding water, delivered to the applicators associated with the prime, single or topcoat coating line.

REGULATION 7.54. STANDARD OF PERFORMANCE FOR NEW COIL SURFACE COATING OPERATIONS

SECTION 1. APPLICABILITY

The provisions of this regulation shall apply to each affected facility commenced on or after the effective date of this regulation.

SECTION 2. DEFINITIONS

Terms used in this regulation not defined herein shall have the meaning given to them in Regulation 1.02.

(a) "Affected facility" means a coating line for metal sheets or strips that comes in rolls or coils.

(b) "Applicator" means the mechanism or device used to apply the coating, including but not limited to roller or spray.

(c) "Quench area" means a chamber where the hot metal exiting the oven is cooled by either a spray of water or a blast of air followed by water cooling.

(d) "Prime coat" means the first film of coating applied in a two-coat operation which is responsible for protecting the surface from corrosion and providing for good adhesion of the topcoat.

(e) "Topcoat" means the final film of coating applied in a two-coat operation to obtain desired aesthetic effects.

(f) "Single coat" means a single film coating applied directly to the metal substrate omitting the prime coat.

(g) "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any prime, topcoat, or single coatings containing volatile organic compounds. This shall include, but is not limited to:

(i) mixing operations;

(ii) process storage;

(iii) applicators;

(iv) drying operations including, but not limited to, quench area, oven drying, baking, curing, and polymerization;

(v) clean up operations;

(vi) leaks, spills and disposal of volatile organic compounds;

(vii) processing and handling of recovered volatile organic compounds.

(viii) For the purposes determining compliance with this regulation if any equipment or operation could be considered to be a part of more than one coating line, its volatile organic compound emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of volatile organic compound it receives from or distributes to each coating line.

(h) If any portion of the series of equipment and/or operations qualify for an exemption according to Section 5, then that portion shall be considered to be a separate coating line.

(i) "Volatile organic compounds" means chemical compounds of carbon (excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate) which have a vapor pressure greater than one-tenth (0.1) mm of Hg at conditions of 20 degrees Celsius and 760 mm of Hg.

(j) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds, but does not mean storage tanks which are subject to Regulation 7.12.

(k) "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be

SECTION 4. COMPLIANCE

(a) In all cases the design of any control system is subject to approval by the District.

(b) Compliance with the standard in section 3 shall be demonstrated by a material balance except in those cases where the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of: the control system design, control device efficiency, control system capture efficiency and any other factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control device.

(c) With the prior approval of the District, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under section 5.

(d) Whenever deemed necessary, the District shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in section 5. The following methods of analyses for coatings shall be used as applicable except in those cases where the District determines that other methods would be more appropriate:

(i) ASTM D 1644-75 Method A;

(ii) ASTM D 1475-60(74);

(iii) ASTM D 2369-73; or

(iv) Federal Standard 141 a, Method 4082.1.

SECTION 5. EXEMPTIONS

Any affected facility shall be exempt from the provisions of section 3 of this regulation if the volatile organic compound content of the coating is less than 0.20 kilograms per liter of coating (1.7 pounds per gallon), excluding water, delivered to the applicators associated with the coating line.